

MASSACHUSETTS PLOUGHMAN

DEVOTED TO AGRICULTURE, THE FARM, THE GARDEN, THE HOUSE, THE LITERATURE, USEFUL ARTS, &c.

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Correspondence from particular farmers, giving the results of their experience, is solicited. Letters should be signed with the writer's real name, in full, which will be printed or not, at the writer's wish.

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AGRICULTURAL.

Pick up carefully the straggling ends of the squash vines and lay them where they will fill out the vacant spaces. If they grow too far, pinch off the ends.

Nearly one-half the weight of fresh green wood is water. What's the use of dumping tons of water into a kitchen stove? With reasonable forethought everybody may burn dry wood.

TOMATO plants can be tied to stakes and trained upward instead of being allowed to sprawl over the ground. Some space will be saved and the fruit will be cleaner, but there will be no more of it than by the ordinary method.

The illustration of the Campbell's Early grape given this week has appeared in a previous issue but is shown a second time as we think it the best grape of our acquaintance. It is two weeks earlier than the Concord and our experience with it for the first time this year leads us to speak highly of it.

Hoe off witchgrass in August, and the larger part of it will be killed, while cutting off in spring seems rather to stimulate its activity. The easiest way to manage a badly infested piece is to sow it to fodder corn in drills about the first of June. The grass begins to be feeble then, and between the cultivation of the corn and its shade, when it grows tall, most of the grass will die out. The following year the piece will be in better shape and any hoed crop can be grown without the hoeing costing more than the crop is worth, which sometimes happens when a witchgrass seed is planted the first year on an early sown crop.

SHALLOW cultivation is the thing during a drought. The soil that is stirred up spreads over the moist soil underneath and acts as a cork to stop the soil tubes which would let the water out. But the top layer itself becomes dry from exposure to the air. Hence the thinner the top layer is made, the better. Besides with many crops the deep soil is now full of roots and too deep stirring tears them off and causes the plants to wilt. Use a fine tooth harrow or cultivator in the field and a rake in the garden. The finer the surface the better it will hold down the moisture. But fine soil will skin over easily after every shower and will then need stirring again.

Immense Hay Crop.

Reports from all sections of New England indicate one of the greatest hay crops on record. The yield has been even heavier than the large production of last year, while the quality has been better owing to more suitable weather for harvesting. Mowings that were nearly run out were so renovated by the heavy spring rains that they produced good crops.

The story is the same whether from Vermont, New Hampshire or Maine, or the states of southern New England; all report a heavy yield of good quality, and low prices.

Many farmers for the first time are stacking some of their crop outside the barns having no room inside. Hardly anybody needs to buy standing grass, and cases are reported where auction sales were attempted but no bidders appeared. Even the hay all cut and cured is cheap, quotations running from \$4 to \$15 per ton according to quality and location. Poor hay is hard to sell at any price. Hay is likely to remain cheap this winter.

A Neglected Vegetable.

A vegetable crop which is much neglected is the winter radish. It is a very relishing article for home use and if packed in sand in the summer will keep plump and fresh a long time. Now is the time to plant them. They can be grown as easily as flat turnips.

The Rose variety is the mildest and tenderest. They should be planted the last of July and pulled before they grow very large. If they are pulled, tops and all, and set in the moist sand, close together, as they grow, they will keep fresh all winter.

Weeds.

Weeds persist and seem to be possessed of a vitality, these hot summer days, which causes the cultivator much annoyance and hard work. It is not sufficient to cut off some weeds with the hoe, as, if allowed to remain upon the mellow surface of the ground, they will rapidly form new roots and continue active growth and life. The common purslane is a good example of this, as it will root from any of its joints, and if a single weed be cut into many pieces each piece will speedily go ahead and form of itself an independent plant. Hence the exceeding great persistence of this weed in field and garden during sultry dog days. In our onion and carrot beds, it will be cheapest in the end to go along with a basket and pick up every weed and fraction of a weed, and carry the same away where no further trouble will be given. It is the small weed, hardly visible, that is the quickly killed weed, but in practical farm work it too often is impossible to kill all at the stage of infancy. Consequently we must fight big weeds, which are great robbers of plant food as well as moisture. The hens, chickens and pigs, and even the cows and horses, will relish some of the weeds, and the stock should have all there are, that the farmers may be partially, at least, reimbursed for the loss incurred by the presence of the weeds.

M. SUMNER PERKINS.

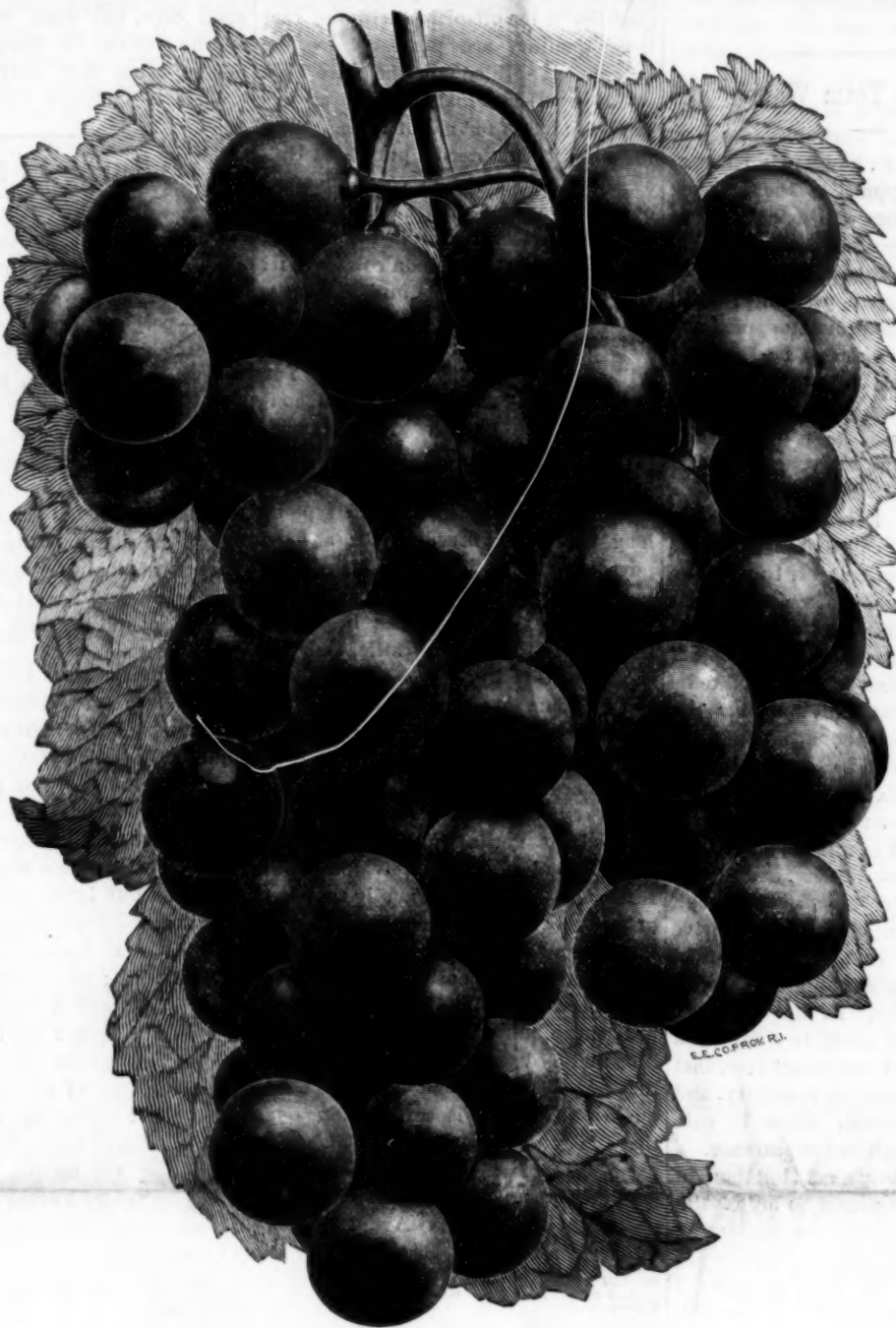
Three Ways With Waste Bones.

To get rid of bones there are three simple and cheap ways. First: grind or cut them for the poultry. The fowls will get the food value out of the bones and will return most of the fertilizing value in the manure. This is the best way to use bones, because we get pay for them in eggs and also in manure. But not everybody has a bone mill, and some of the harder bones are not easy to be worked up.

Second: bury the bones under orchard trees or under vines, and bury them deep enough to stop the dogs from trying to dig them out. By this method the planter will need to wait a lifetime nearly, before getting full fertilizer value of the bones, but if a tree gets a very liberal dose of bones it will begin to show the effect.

Third: burn the bones in the kitchen stove. Everything will be burned away but the phosphate of lime. The bones mixed with wood make a hot fire and they have some value as fuel. The ashes are a good fertilizer.

Bones may be composted or treated with sulphuric acid if desired, but comparatively few farmers care to bother with any but the simplest of ways.



THE CAMPBELL'S EARLY GRAPE.

The Massachusetts Agricultural Outlook.

Reports to the State Board of Agriculture indicate that the season continues to be remarkably free from the presence of insects in such numbers as to be particularly injurious. The potato beetle is the one most commonly spoken of as doing damage, but even this insect does not appear to be as destructive as usual. There are several reports from Hampden County that the elm tree leaf beetle is at work on the elms, and the insect would appear to be thoroughly established in that section. Other insects reported as doing damage are currant worms, tent caterpillars, squash bugs, cabbage maggots, onion maggots, canker worms, rose bugs, cut worms, horn flies, squash vine borers, asparagus beetles, white grubs, strawberry fleas, grasshoppers, plant lice and cranberry vine and fire worms.

Indian corn has come forward very rapidly during the recent hot weather and is now generally in good condition. Some correspondents qualify their statements in regard to the crop by saying that it is late, but with good growing weather the prospect is that it will soon regain all lost ground. The proportion that will be put into the silo varies widely in different localities. The proportion is largest in Worcester County and smallest in the southeastern section of the State, but we believe it to be everywhere steadily, if slowly, increasing.

The hay crop is everywhere reported as very good indeed, larger if anything, than last year's exceptional yield. At the time of making returns, haying was practically completed in all sections. The quality of the crop was excellent and the good hay weather of the early part of the month enabled the farmers to secure it in prime condition. Certainly as large a crop of as good quality has not been secured in as good condition within recent years.

The heavy hay crop and the good condition of pastures have both operated to reduce the acreage devoted to forage crops somewhat. They are generally in good condition. Fodder corn is the crop most extensively grown for forage, and oats, Hungarian grass, barley, millet and peas and oats follow in the order

given. Other crops grown for forage are vetches, oats and barley, peas and barley, cow peas, turnips, rye, soja beans and oats and rye.

Market-garden crops are generally reported in good condition and promising well. Prices average about as in other years, any falling off in some crops being balanced by increases in others.

Early potatoes have not been generally dug yet, but the returns seem to indicate that the crop, as a whole, will be light rather than otherwise, the hot, dry weather of early July having operated to check their growth in most instances. No complaint of blight is noted as yet. Prices generally rule high, but reports have been made only on the very first digging, and cannot be taken as surely indicative of later results.

Apples will be a light crop for a bearing year, not having set well and having also dropped badly. Peaches will also be a light crop. Peaches are generally reported as most unpromising. Plums promise a fair crop and quinces a good crop. Grapes generally promise well though there is some complaint that they are not as forward as they should be. The returns do not warrant any very definite statement as to cranberries, but we should judge that the crop was, on the whole, hardly up to the average.

Pasturage suffered somewhat from the hot, dry weather, but are still generally in good condition. The recent rains have generally helped those that were getting short and with favorable weather all should do well in future.

Rye, oats and barley appear to be about average crops, being certainly up to the average and perhaps slightly above. There is a little complaint of rust on oats, but not enough to materially affect the crop.

It is a sort of bucket shop business: that is, to try to run a dairy without testing the cows, because there are always some poor ones in most herds, which give a very small lot of poor milk for their board and care, leaving the dairyman short on butter and long on debts and endurance.—Practical Farmer.

Plants in the Greenhouse.

In making the beds in a greenhouse there is frequently used about seventy-five per cent of barn yard manure and twenty-five per cent of loam or sand.

A ton of the manure contains of the following named ingredients (see page 178 Massachusetts Agricultural Report for 1895), pounds, moisture 1340, nitrogen 10, potash 11, phosphoric acid 8; worth at Experiment Station valuations \$2.06. The organic matter of the manure also has a value, but the organic matter of peat, if properly composted with a carbonated alkali, is equal in every respect to the organic matter of barn yard manure, and can be obtained at very much less cost in most places. Spent hops from the breweries make a good substitute for manure, the analysis of their ash is: Potash 1.45, lime 23.70, magnesia 2.75, phosphate of iron 2.50, sulphuric acid 3.05, phosphoric acid 4.10, carbonic acid 9.00, chloride sodium 2.95, chloride potassium 0.70, silica soluble 27.10, sand and charcoal 21.80; total 99.10, percentage of ash 10.40. In general, greenhouse plants so far as the stem and leaf is concerned, with the heat, abundant watering and care they receive, are thrifty and grow luxuriantly; but a frequent complaint is made that the plants run to stem and leaf and do not flower abundantly at the proper time, and that the exuberant growth of the plant is obtained at the expense of the flowers. If this is the case the difficulty is easily obviated by removing the cause, which is in using a manure not properly balanced, containing too large a proportion of nitrogen for the phosphoric acid and alkalies; therefore reduce the proportion of nitrogen, or what is still better, add the requisite quantity of phosphoric acid and alkali to bring up the flower and seed forming capacity of the plant to its stem and leaf forming capacity. In strengthening the manure with phosphates and alkalies, the form and condition in which they are used is all important. If the manure is strengthened at the time of making the beds, powdered phosphate of lime can be used to furnish the phosphoric acid; in this form it is worth two cents a pound; if, however, powdered phosphate of lime was not added when the bed was formed and an im-

mediate effect is wanted, the phosphoric acid should be applied in the form of a phosphate of soda or potash or a superphosphate of lime; in this form the phosphoric acid is worth five and one-half cents a pound. The alkalies, either potash or soda, should be used in the form of a carbonate, not a muriate, sulphate or nitrate. Soda is equally as good to use as potash and is very much less in price. From this is seen the economy of properly making the beds and strengthening them at the time of their formation to produce the best results in flowering as well as growth of the plant.
ANDREW H. WARD.

Most Mangels for Least Work.

A good field of mangels is a great comfort to a dairy farmer looking forward to a winter of dry fodder with a lot of cows, whose milk flow must be kept up, or no winter.

The work of raising the crop is not tedious after the knack has been learned. The secret of getting most out of the least work is first in doing nearly everything by horse power, and second, by planting a trifle late.

The field should be long and narrow with drills running the longest way. The machine sower is a great invention for planting beet seed.

Do not plant before the first of June. The land should have been ploughed awhile before planting in order to sprout the weed seeds on the surface. Then the process of harrowing and planting will kill most of the first crop of weeds. Beets, planted when the ground is warm, come up in a few days and are well along before the weeds begin again, while the early planted beets sprout slowly and are often beaten in the race by the weeds. For late planted beets a fine-tooth cultivator and a horse weeder will do most of the work if the land was clean to begin with, but the hoe will be needed to thin out the plants, and probably a little hard work also. When the weeds begin to show again go with a double moldboard plow followed immediately with the cultivator.

At harvest time loosen the beets by running a subsoil plow beneath, and they can be gathered easily. If the land is deep and well-manured, the crop ought to be 1,000 to 2,000 bushels, according to the season. In a good cellar they will keep until May. It is the general testimony of farmers, who are trying part mangels in place of a cow diet wholly of dry fodder, that their cattle never looked so well before, nor so well kept up their appetite and flow of milk.

Excellent Results.

Mr. Chas. H. Ellsworth of Crystal Spring Farm, of Worcester, Mass., sends us his report of tests made in his herd recently which gave excellent results. The first was that of his Jersey cow, *Pussy Stoke Pogis*, No. 62,547. She is a daughter of Garfield Stoke Pogis, 15,963, and *Pussy Baker*, 6,994, who has a test of seventeen pounds, nine ounces, and is the dam of four tested daughters. *Pussy Stoke Pogis* calved March 11, 1898, and in seven days from May 23d to May 29th, she gave 229 pounds, ten ounces of milk. She made twenty-one pounds, two ounces of unsalted butter, which, after salting one ounce to the pound in working, made twenty pounds one ounce of well worked marketable butter. This cow was eight years and six months old at the time of the test. She was running at pasture and was fed fourteen pounds of mixed grains per day. She makes the thirty-third daughter of Garfield Stoke Pogis, who has been tested.

A test was also made of *Alta B.*, 73,003, for seven days from May 30th to June 5th, 1898. She gave 215 pounds, six ounces of milk, which made fourteen pounds, thirteen ounces of solid, well-worked, marketable butter. This cow was given eleven pounds of grain daily in addition to what she secured in her pasture. *Alta B.* was seven years, three months old at the time of this test, which was made two months after calving. She is a daughter of Bent,

18,867, and Hild, 46,148, who traced to Signel and choice imported blood.

A test was made of *Dido B.*, 112,926, seven days from May 16th to May 22d. She gave 262 pounds, three ounces of milk, which made fifteen pounds of well-worked, solid butter. This cow was three years and four months old at the time of this test. She was running in pasture and was given fourteen pounds of grain daily. She is a daughter of Queen's Legacy, 26,952, and Eufrasia, 62,546, fourteen pounds, three ounces as a two-year-old, making her a granddaughter of Garfield Stoke Pogis, 15,963.

Coal Ashes and Their Various Uses.

Few people comparatively, know the value of sifted coal ashes on the farm. There is nothing better for a mulch for small fruits especially currants, gooseberries and raspberries. They are also of great value to spread around the trunks of apple and pear trees, as they retain the moisture and kill all vermin. The writer several seasons has thrown a liberal supply around the trunks and up among the lower branches of apple trees during the month of March and has had no trouble with the tent caterpillar, when previous seasons there were from two to ten nests in a tree. Wood ashes are also an excellent lawn dressing, especially on high land. They are suited to bring in a good crop of clover.
—C. E.

Dairy Notes.

The work of running a dairy properly requires more methodical care than any other employment on the farm. Every part of the work must be perfectly performed every day and at nearly the same hour as possible. The man who has brain enough to run a twenty-five-cow dairy successfully, has brain enough to be a wise and popular governor of a state, had his faculties been trained for it.

It is the settled opinion of many dairymen that there is more resulting profit to have cows drop calves in the fall than in the spring. It is natural for cows to breed once a year, and at the time in early summer when grass is at its best and they have become recruited from the effects of a tedious winter. Some cows have become so used to this habit that it can be changed only with considerable difficulty. When the usual breeding time comes, if they are not bred, they have occasional spells of uneasiness or heats, during which their milk is hardly fit to use, especially to make gilt-edged butter. To obviate this, breed the heifer the first time, so the calf will drop at the time desired; and after that it will be natural for her to breed at the desired time. This method is now being successfully adopted with sheep by those who grow lambs to be dropped in early winter; and it seems to work equally well with cows. It is easier to create a habit than it is to change one.—Dr. Galen Wilson in the Practical Farmer.

A dairyman can expect no profit from a cow until she has paid for her keep. Whether that item be large or small the cow exacts it week by week, and refuses to return any profit till it is paid. If she is so constituted, that she requires all the food she can eat, to maintain her, then her returns are minus. It is claimed, that it takes at least 200 pounds of butter to pay for a cow's feed, and labor consequent on the production of the milk and butter. If we could draw a hard and fast line at 200 pounds of butter, and discard all animals that do not come up to that mark, we should be making a greater stride towards a more profitable condition of dairying than could be done in any other manner. There is no doubt, that a few of these unprofitable animals are being weeded out each year, but there are an equal, if not a larger, number of them born. Certainly, there are a few promising ones in the wilderness of unprofitable cows, but the outlook is, that for many years, the 150-pound cow will continue to flourish.—Hoard's Dairyman.

Bacteria and Dairying.

HOW CAN BACTERIA BE EXCLUDED FROM MILK.

Long before he was told the reason, the practical dairyman learned by experience, that cleanliness, thoroughly carried out, enabled him to secure his milk in a satisfactory way. The desired result can, however, be much easier accomplished if we know the cause of bacterial infection. Washing the udder to prevent dislodgment of dust particles, steaming the pails and cans to destroy lurking germ life, rejecting the fore milk, keeping the stable free from dust during the milking, are all practical methods that have a rational scientific basis.

Where these methods are conscientiously carried out, good results are to be obtained with ease. Private dairies, that are engaged in supplying the best quality of milk, are following such methods with success. For factory purposes such scrupulous care as is practiced in milk dairies, would perhaps be considered impractical, but if our factory milk was handled with equally great care, the hundreds and thousands of dollars that are annually lost in this state alone, on ordinary dairy products, would, for the most part, be saved.

Effect of Chilling on Bacterial Growth in Milk.—Suppose that the greatest care has been taken to secure the milk in as clean a manner as possible. This will reduce the number of bacteria in the same, and yet, if no pains is taken to chill it, the advantage gained will be largely lost. The temperature of the milk as it comes from the cow approximates blood heat, and, therefore, the conditions are most favorable for bacterial growth. At eighty degrees Fahrenheit a single organism will form 120 new individuals in four hours, while the development of the same germ would have been so retarded at fifty degrees or fifty-five degrees Fahrenheit that but little increase would have taken place.

The secret, then, lies in early cooling. If the milk is allowed to cool naturally it loses its animal heat so slowly, especially in a large volume, like a canful, that the bacteria that are contained in it are able to multiply in a vigorous manner. To check this development the milk should be cooled as soon as possible. An early diminution of the temperature is much more efficient in checking growth of germ life than even a longer exposure applied later.

WHY MILK SOURS.

If milk is allowed to stand for several days, it almost invariably undergoes a change that is known as souring. Its physical appearance is much altered and the once valuable food is converted into a relatively worthless by-product. This change is a fermentative process that goes on in the milk and is caused by a large group of different bacteria. These kinds are particularly numerous in stables and barns; moreover, they seem to find in milk such good surroundings, that they grow with rapidity.

The sour taste of milk, so fermented is due to the formation of lactic acid, that is produced by the splitting up of the milk sugar in the milk. As acid is formed in gradually increasing amounts the chemical reaction changes from a neutral to an acid condition. When the amount of acid formed approximates 0.6 per cent, the casein is unable to remain in its normal condition, and is precipitated, forming the solid curd, that is characteristic of a sour milk fermentation. The formation of acid does not go on until the sugar of the milk is all decomposed, for the lactic acid bacteria are unable to grow where the amount of acid exceeds 8 per cent. They are retarded therefore by the presence of their own by-products.

The souring of milk is so universal a phenomenon, that it is considered almost a natural and inevitable change in milk, and yet, if milk could be secured without bacteria, it would undergo no such change.

Does Thunder Sour Milk?—No exception can be taken to the statement that milk is very apt to sour during a thunder storm. This universal experience has led to the notion, thoroughly believed by many, that the cause of the souring is due to the action of thunder, or possibly the electric discharge. Experimental researches upon this question, however, fail to establish any such relationship. The passage of the electric spark through milk does not increase the acidity of the same. If bacterial growth is held in check in various ways, no atmospheric disturbance, as thunder or lightning, has any effect. All the evidence indicates, that the increased tendency toward the formation of lactic acid is due to the more rapid growth of bacteria, caused by the more favorable growth conditions that obtain at such a time. The warm, muggy atmosphere favors rapid germ development and consequently the souring changes occur more quickly.

Mixing Night and Morning's Milk.—A well established rule of dairy practice is not to mix the night and morning's milk, or to put it on a broader basis, fresh and old milk. Common experience teaches, that this mixture is apt to sour much more rapidly than

where the two milks are left separate. The reason for this is a physical one, and is based on the difference in temperature of the two lots, and the relation that these temperatures bear to the bacterial life that is contained in each milk. Under normal conditions the older the milk is, the richer it is in germ life, but the night's milk is usually cooler than the morning's milk, which is relatively deficient in germ life. The mixture of the two lots raises the temperature of the whole mass, and at the same time, increases the germ content of the fresh milk so that fermentative changes occur more rapidly.

If night's milk at a temperature of 55 degrees F. contains 1,000,000 bacteria per cc., and the morning's milk, at a temperature of 80 degrees F. has only 20,000 organisms per cc. the mixture of the two in equal volumes would raise the temperature to about 65 degrees F. At this temperature the 510,000 bacteria in the mixed milk would grow more rapidly than the million at a lower temperature, and would, therefore, sour the same sooner.

HOW CAN WE DETECT BACTERIA FROM OTHER TAINTS.

Before one can intelligently search for the cause of a taint in milk, he must have some idea as to the character of the same. A tainted condition arising from any source injures the quality of the product, but the effect of a taint is largely determined by its character.

Taints may be classified into two groups depending upon their origin:

1. Those produced by bacterial fermentations in the milk.

2. Those caused by the absorption of odors directly from the animal, or after the milk is drawn.

In the minds of most dairymen, the latter class has been considered the more important, and the effect of the first group has not been adequately recognized. As a matter of fact, a larger number of taints, that affect the quality of milk are induced by bacterial growth, than otherwise. The danger that comes from this class is, that it is caused by a living organism, and, therefore, may be widely distributed unawares. A physical taint is unable to reproduce itself, so that a mixture of tainted milk with a larger quantity of normal milk serves to diminish the intensity of the taint.

The manner in which the respective taints are produced, enables one to detect the difference. If produced by germ origin, a well-marked taint in any milk can be propagated from one batch of milk to another, by transferring a small quantity, and placing it under conditions that favor bacterial growth. Particularly is this true, if the inoculated milk is first heated to destroy pre-existing bacteria. If it has been directly absorbed from some external source, it cannot be transferred in this way.

Then again, if a taint is produced by biological causes, it will not, ordinarily, appear until some time after the milk is drawn; for, as a rule, bacteria gain access to the milk subsequent to its withdrawal, and a certain period of incubation must elapse before the taint-producing organism can increase in sufficient numbers to produce the obnoxious odor or flavor. If the defective condition of the milk is due to direct absorption from the animal, as is the case where the food contains volatile odor-producing substances, then it will be noted immediately after milking. Aeration of the milk is often recommended in such cases, but sometimes the odor is so persistent that this fails to eliminate it.

Milk may acquire a taint some time after milking, and still it may be due to direct absorption. If this should happen to be placed in a room with odor-yielding substance, it can easily acquire it in a cold condition. Such belated absorption might be considered as due to germ origin, unless the conditions were carefully determined.—Hoard's Dairyman.

Creamery Water Supply.

The water supply of some creameries should be examined and analyzed by a competent chemist to find out what impurities the water contains. I have known of several cases where the butter had a peculiar flavor, and on examination it was found that the water had the same flavor. After the water had been pumped out and the well cleaned, the trouble disappeared. At some creameries the wells are so located that the seepage from the land around will soak into them and give the water a bad smell, so that it is unfit to wash butter in, or anything else around the creamery. Another thing that should receive attention is the water tank. When was it cleaned out last? I have seen some water tanks in the creameries that had a coating of mud and slime on the bottom that was two inches thick. If you have not looked into your water tank lately, do so at the first opportunity. If it needs cleaning out, apply the remedy, and it will improve the flavor of your butter, if you have had any trouble in that line.

In those creameries where they have an inexhaustible supply of water, and

where that supply is used mostly for cooling the cream, it is a great saving of fuel to have a steam pump. With it you can pump fresh water around the cream without running the engine; and it takes less coal to keep up the steam to run a pump than it does to run a belt pump by the engine. It also saves the wear on the engine, as you don't have to run the engine, except when you are separating and churning in the forenoon, and you have to pump water in the afternoon, if the cream is to be cooled with water. I was in a creamery a short time ago where the creameryman was so particular about the water he washed his butter in, that he would not use the water that was pumped into the wooden water tank that was in the creamery. As soon as the cream was emptied into the churn, the vat was washed out and scalded and pumped full of fresh water while the churning was being done. The water out of the cream vat was used to wash the butter with.—N. Y. Produce.

Let the Team Walk.

Singular, isn't it, how few men owning big teams appreciate the walking gait. Large horses will actually go as far and as quickly at a walk and do as much in a month as if trotted, or "shacked" at every opportunity. Still better, they will improve in appearance without an increase of feed. Some years ago I proved this to one of my employers. He was a pushing, active man, kept three large teams with a driver for each, and always gave orders to trot the horses whenever level or a load permitted. Fever felled him for three weeks. He called in his drivers and said to them, "Boys, I want you to take care of the horses. Whoever has the best looking team when I get well I shall buy a suit of good clothes." As we left the room I determined to be the owner of that suit, and that my team should not trot a single step henceforth. The boss was sick convalescent about six weeks. I remember that first day of walking my team. They had trotted so much they were not very ambitious walkers, and it was long after the other boys were through and their teams put out before my drive was completed. In fact it was late in the evening. The next night I finished my rounds earlier. In ten days my team would do as much in a day on a walk as either of the other two, that were jogged at every opportunity, and my horses, I noticed, began to gain wonderfully in flesh and appearance.

Well, I did not say much, but thought a good deal, and adhered to my resolution. I did not change the amount of grain I was giving my team before the owner fell sick, but kind of guess I rubbed them more. In fact I couldn't help it. The horses got so handsome I began to be very proud of them. It wasn't very long before the other boys caught the idea, but before the boss got rolling in the dirt. My team was given that privilege very often. Oh, how horses love it when they get accustomed to the idea that they may roll undisturbed. When my horses had been at work and were perhaps tired and sweaty, they could scarcely wait for the harness to be removed, when they would drop and load themselves with dirt. I prefer dust or a clean loam. There is no place like a plowed field or garden. Then I would clean them out and polish up their coats. A long-handled broom was the first implement, to be followed by a rice-root brush and a big cloth—a curry-comb rarely or never.

When the boss was well enough to go around to the stable to inspect the horses, he did not know my team, and could scarcely believe it belonged to him. All the horses came out free, but mine had their heads up and they began to play like colts. We hooked them all to wagons, and such walking as mine did, would have elated any horseman. Urging did not make them break into a trot. I was taken to a first class place and told to pick out the suit I wanted. I selected a good one, but the boss said, "That is not good enough, Rolfe. I have learned a lesson worth the best suit in the store," and he bought it for me. From that time the orders for all were "Walk your horses," and the orders were obeyed. Any horse will soon learn to walk well if taken care of and trotted but little.—Farmers' Guide.

Cranberry Culture in the South.

In the North Carolina railroad car exhibit there is displayed a glass jar filled with mountain cranberries from near Asheville, N. C. These cranberries compare very favorably with the best grades of this fruit from the New Jersey bogs, or from the West. The Cape Cod grower gathers his crop in September and October. There appears no reason why the cultivation of these highland cranberries should not become a profitable industry.—Southern Field.

Selecting a Bull for Dairy Purposes.

An expression that we often hear among cattle breeders is, that the bull is half the herd. Now in selecting a sire to head a herd, it is necessary that one should be chosen that not only possesses in a marked degree all the characteristics we desire, but he should have the power of reproducing his good qualities, as sometimes we meet with excellent individuals that utterly fail to breed true to type, their blood being impotent to stamp their own good qualities on their offspring. Such animals should be carefully avoided. One of the great disadvantages we labor under as farmers is that we are not sufficiently educated to the advantages of the thoroughbred sire. It is a fixed law of nature that no quality can be transmitted that is not possessed by some ancestor. Surely any intelligent breeder who wishes to produce certain qualities in the offspring, will see that those qualities are possessed by the parents. The blood of the pure bred sire is so strong that he will always impress himself on his offspring. For instance, if you breed a pure bred Holstein bull with common cows, nineteen out of twenty of his calves will be black and white. That is prepotency. Why does not the common cow have it? Because her heredity is broken up, she cannot impart it. Again, breed a Holstein bull and a Jersey cow, and you will get a very different result. You will have a calf showing the characteristics of both breeds. Now what is breeding based on? It is based on heredity or prepotency, which has been established and become a fixed type by long continued breeding for a fixed purpose; and it is certain if we wish to grade up a herd of dairy cows, we must select a bull that has been bred from a dairy breed of cattle, and can show by his pedigree that his dam and his granddam were good cows. We should then be reasonably sure of his being a good sire himself. The time and money wasted by using inferior—i might say worthless—sires is incalculable. It is not a difficult matter to select a bull of good individuality, at reasonable cost, from a family that has proved themselves good performers at the pail and churn. The good sire from a good family is almost certain to produce good cows, but he who buys the poor cheap bull will certainly waste his time and feed and fall in his object in the end. The first and most essential quality in a bull is constitution, one that is a good feeder and makes good use of his feed, and one that is large and well developed, as this is an indication of health and vigor. Avoid in-bred bulls as in-breeding has a tendency to weaken the constitution, and surely if any class of cattle require a good constitution it is dairy cattle, from the nature of the demands made upon them.

Now in choosing a dairy bull there are certain points by which we can be reasonably sure that he will be a producer of good cows. Every breeder must judge for himself what bull is best suited for his particular herd, but he should be especially good in points where his own cows are lacking. I give the preference to a mature animal, as then his calves can be seen and one can judge what kind of stock-getter he is. A few of the points I consider as absolutely necessary in a dairy bull are: first, a good skin of medium thickness covered with fine soft silky hair; color of skin yellow; the secretions on the inside of the ears oily and abundant; legs short, straight and wide apart; back level; quarters long; teats well developed; rather fine waxy horns; chine should be open and the spinal column loose; wide between the joints. A bull with these general characteristics, if he has a good pedigree, will almost certainly prove a good sire. Such has been my own experience. I have succeeded in breeding a herd of grade cows that are a great improvement on their own dams.

They Continued to Spread in Spite of Treatment but Now They are Healed—A Wonderful Work. For many years I have been a great sufferer with varicose veins on one of my limbs. My foot and limb became dreadfully swollen. When I stood up I could feel the blood rushing down the veins of this limb. One day I accidentally hit my foot against some object and a sore broke out which continued to spread and was exceedingly painful. I concluded I needed a blood purifier and I began taking Hood's Sarsaparilla. In a short time those dreadful sores which had caused me so much suffering, began to heal. I kept on faithfully with Hood's Sarsaparilla, and in a short time my limb was completely healed and the sores gave me no more pain. I cannot be too thankful for the wonderful work Hood's Sarsaparilla, has done for me." Mrs. A. E. GIBSON, Hartland, Vermont.

Those Dreadful Sores

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In conclusion I say to any farmer desirous of improving the capacity of his cows, select the best native cows procurable, breed them to a bull such as I have described, give the heifer calves good care, but don't make them fat, and he will not be disappointed in his heifers when they take their place in the herd.—Holstein Friesian Register.

Cutting off Stubs.

The growing season thus far has been favorable, and the buds set on young trees last fall are doing well, many of them—peach especially—being four or five feet high, so that it is time to cut off the stubs. The stub, as many know, is the portion of the stock (three or four inches left above the bud at the time of cutting off the stock in spring. This stub—by mid-summer or a little later—is to be cut off with a smooth, sloping cut on the side opposite the bud. The growth of the tree being active, the healing process begins at once, and by fall the wound is nearly or quite healed over.

In doing the work a sharp knife and a steady hand are necessary; otherwise, the growing bud will be cut and partially injured, or perhaps cut off entirely, thus losing all the previous labor and care. To avoid this the knife requires to be drawn, not so much upward but more to the right in such a way that the point will come out by the time the stub is cut through—or a little before. Several cuts may be necessary in making a nice, smooth finish; but a skillful eye and a steady hand, and a knife with a keen edge will be equal to all this.

Some persons cut the stock off close above the bud at the spring cutting, which is not a good practice. There is too much risk of the bud dying out, and in addition the wound does not heal readily. But by leaving a stub of three or four inches the living bark on this not only prevents the bud from drying out but aids largely in drawing the life-giving sap up to it. Then by keeping the sprouts (which usually start plentifully from the stock) rubbed off from time to time, the sap is directed into the bud. And the wound made later in the season by cutting off the stub heals well as it is left alone.—National Stockman.

BE A PIONEER MINER

And Get in Before the Spring Rush and Receive Advantage of its Influences.

COPPER STOCKS ARE BOOMING.

THEY ADVANCE IN BOSTON IN THE FACE OF THE WAR SCARE.

Condensed from the "United States Investor," Boston, March 5, 1898: The market for copper stocks is booming. While the Maine explosion caused other securities to rapidly decline, they showed unparalleled strength. The non-dividend payers even are advancing. Copper has advanced to twelve cents a pound, which means enormous profits. Consumption of copper is advancing faster than its production. In January, England, France and Germany consumed more copper by 447,3 tons than the entire production of the United States. The visible supply in England and France decreased 2,693 tons during January and February. Higher prices for copper stocks are confidently predicted. Boston & Montana has advanced from 15 cents in July, 1893, to \$1.88 in March, 1898, and Calumet & Hecla between the same period from \$2.47 to \$5.40. Copper stocks are higher than when copper was 17 cents or 5 cents per pound higher than now, which indicates a conviction that the immensely increased demand must greatly advance the price of the metal.

IMPORTANT NEW COPPER DISCOVERIES IN COLORADO ONLY.

In recent years no new copper discoveries of importance have been made in the entire world except in Colorado. These are now causing a great rush to the

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THE KENDRICK PROMOTION COMPANY

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The Kendrick Promotion Company has been in the mining stock business in Denver for the past twenty years, and during that time has handled many of the large mining propositions of the state, with large profits to its customers, and has no hesitation in recommending this as one of the most promising that it has ever presented to the public. We anticipate that this stock will be quickly taken, and it will therefore be necessary to send in orders without delay.

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FIRST TO FRONT.

When the soldiers reached Chickamauga, there were several other camps in the field. Landed in Chickamauga, it was a "path-finder." PAGE WOVEN WIRE FENCE CO., Adrian, Mich.

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POULTRY.

Chicken Cholera.

A Reader (N. H.) wishes cures for cholera. It is hardly worth while to doctor hens for this fatal disease and the energy of the owner should be devoted to preventing its spread. Let him separate the sick hens and then make up his mind to root up the germs of the disease from the premises by thorough cleaning and disinfecting. The surface of the hen yard should be scraped and burned. Every part of the floor, roosts and nests, should be scraped perfectly clean, and then disinfected with a liquid made of one pint of carbolic acid to fifty quarts of water. Experts even are not able to save enough of the victims of cholera to pay for doctoring, but any one can check its spread by thorough measures. It is quite possible what Reader thinks is cholera is merely severe diarrhoea, which would yield to dieting and a dose or two of ipecac pellets in the drinking water.

Good Stock; Good Luck.

There is a good deal in proper food and care, but there is also a good deal in the hen. A fowl with a strong constitution, hardy, well-grown, and has good appetite and digestion will stand considerable nonsense, and continue to grow or lay eggs. A mistake which beginners often make is to start with fowls of some run out strain which has been much advertised for prize winning but which has been bred until it has lost some of its vigor.

A skilled hand might do pretty well with such fowls, but the beginner is likely to make more mistakes than the tender prize winners can endure with profitable results. Better visit the breeder personally and pick out stock that is well built and full of vigor. It would no doubt pay for the beginner to take an old breeder with him. There is enough difference between hardy and tender stock to alone decide the venture for marked success or complete failure.

Select Now.

When the fowls begin to moult it is time to select the breeders for next year. Almost any hen will look vigorous and lay well in spring, but only a good hen will lay into the moulting period, and get through with the process quickly.

Such fowls have strong vigorous constitutions and if properly fed give a large yearly record of eggs.

But those which are slow moulting and which go about late in the season with pin feathers showing indicate lack of vigor, even to produce feathers, and will be still less likely to produce a profitable number of eggs. The shape of the hen will help in deciding her value. A hen which is long and boat-shaped, and also fairly deep, is likely to show staying powers. She should have a deep chest and square body, making nearly a straight line along the breast and beneath.

The smaller, medium sized breeds should not be allowed to run smaller than the natural size. A large Leghorn, Hamburg or Spanish will have better staying powers than a smaller one, vigor and activity being equal. On the other hand, Brahmas or Cochins which run rather small as a breed are likely to lay more eggs than the larger specimens.

Poultry Notes.

Cabbages which fail to head up well should be set aside in the fall for the hens.

After the chickens are all hatched, the large poultry farmers keep the incubators at work while longer hatching duck eggs. The duck season lasts six months, from February to July.

In shipping live poultry don't overcrowd, and don't have too large coops. In hot weather overcrowded fowls suffer greatly, and there is often a shrinkage in weight, and loss by death.

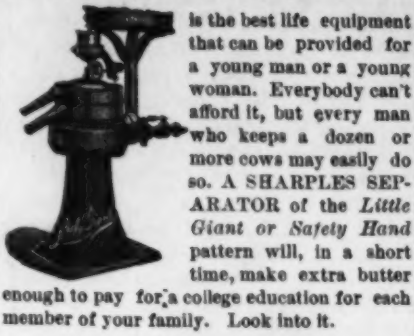
Wheat is now cheaper than it has been, and the prices are likely to remain fairly low. The egg producer who makes wheat and bran a prominent part of his rations commits no mistake.

The drinking fountain must be kept clean. Automatic fountains are extremely likely to become foul and the source of bad smells; nothing but occasional scalding will keep them fit for use.

If fish are used for poultry they should be boiled until well done and mashed up with meal and shorts. This feed should not be given more than once a week, and even then there is a chance that the eggs will not be strictly fancy in flavor. The rankness of the food is lessened by cooking.

A large duck raiser allows four hundred quarts of mixed feed per day, and two feedings, for six hundred breeding or laying ducks. This is two-thirds of a quart for each duck per day. This

A College Education



is the best life equipment that can be provided for a young man or a young woman. Everybody can afford it, but every man who keeps a dozen or more cows may easily do so. A SHARPLES SEPARATOR of the Little Giant or Safety Head pattern will, in a short time, make extra butter enough to pay for a college education for each member of your family. Look into it.

P. M. SHARPLES, West Chester, Pa.

item shows the enormous appetite of a duck compared to a hen. The rations of one duck would keep about three common hens.

The whole theory of egg-production consists in trying to make it seem spring time to hens the year round. Fowls that are kept warm, but not too warm, and do not miss their spring supply of animal food and green stuff are likely to show a pretty good record every season of the year.

A mixed grain feed makes the best evening ration for laying fowls. They do not get enough of one kind at a feed to get tired of it, and thus they keep a good relish. Corn, wheat and oats make a good mixture, so do cracked corn, wheat and buckwheat and barley. A mixture which hens relish more than any other is buckwheat, barley and corn.

Young geese are ready to fatten at eight weeks old. Place them in a pen where they can be quiet and undisturbed. Feed them three times a day all they will eat up clean, giving corn meal dough with about one-fifth the bulk of meat scraps. Care must be taken not to scare the fattening geese or worry them, since they will not do well under such circumstances.

The difference between success and failure in egg production, is not so much in number of eggs produced. Anybody can make hens lay in spring and early summer, and hens that have been laying the rest of the year will lay very fast then, and make up quite a fair record of low priced eggs, but the skillful poultryman contrives to make his fowls lay a good share of their eggs at high prices in winter, and as a result their record in spring is not what it otherwise would be. It is not the number of eggs, but the price that counts most for profit.

To Hatch and Grow Goslings.

SOME PRACTICAL DETAILS.

In producing early goslings for market it is best to set the eggs under hens or turkeys. If the laying geese become broody, they may be broken up by shutting them off their nests for five or six days. They will lay again, usually, in about two weeks or less. Many growers let the geese sit on their third lot of eggs, as few lay after that; but some do not allow them to sit at all. Embryos lay fewer eggs to a litter, and are more apt to sit than other breeds, although Africans and Brown Chinas are very persistent when they do have the fever. Toulouse geese are least inclined to sit at all, and sometimes will lay through the entire season without becoming broody. More early eggs are secured if the geese are not allowed to hatch their own eggs. While this is desirable in the production of goslings for the early market, I would not practice it, were I breeding stock for exhibition or breeding purposes.

The quicker the eggs are set after they are laid, the better they will hatch, and the stronger will be the goslings. If kept more than a day or two, they should be turned daily. A common hen will cover five eggs, some more and some less. A cross between a Part-River Cochins and a common medium-sized hen makes the most reliable sitters. They are not so clumsy or heavy as pure-bred Cochins and Brahmas, and less excitable and more reliable than Barred Plymouth Rock or Wyandottes. If you have trouble in securing sitting hens at the desired time, and can secure turkey hens that are not broody, they may, if you know how, be persuaded to sit whenever you want them to, in most cases.

Whether your goose eggs are set under hens or turkeys they should be sprinkled during the incubating period. In this section it is done twice per week after the fifteenth day, and more freely just before the twenty-eighth day when they commence to hatch. Restless, flighty hens are very apt to step on the goslings at this time and kill them, especially when the nests are small. If quiet, steady hens are set in roomy nests made in the bottom of a barrel, for instance, there is less trouble. In some cases it is best to take the goslings away from the unsafe hens as soon as hatched, and put them under others. Disturbance of this sort is to be avoided if possible, as it not only lowers the temperature, which ought to be higher at this time, but allows the escape of

moisture liberated by those already hatched and drying. The lining of the shell of the remaining piped eggs may therefore become dry and tough, and the goslings, unable to liberate themselves, may die. If the hen is a steady one, and the eggs properly sprinkled, all goslings worth having will hatch without aid. Allow them to remain under gentle hens for twenty-four hours, that they may get well rested and thoroughly dried. To keep the hens contented they may be given food and drink while on the nest. I would lay much stress on the importance of having a quiet, steady hen for hatching goslings.

When twenty-four hours old the goslings may be taken away and brought up without hens. Some prefer to keep them with hens, but where sufficient attention can be given them I prefer to put them together in lots of thirty or forty, and lower them in a Peep O'Day brooder, or in a basket or cheese box placed in a warm room near the stove. When taken from the hens, if the day is pleasant, I at once put them out in the open air on tender grass. When first put down they will not be able to stand, but after filling their lungs with cool fresh air a few times they brighten and become energetic. Although unable to keep on their feet, they frolic and tumble about like young calves. First one will straighten up, stretch his wings and suddenly leap. Others, catching the spirit, do the same, and soon all are hopping and tumbling in the liveliest manner. After this expenditure of energy they promptly turn their attention to the water dish and tender grass and manage to eat and drink quite a quantity.

As soon as they are sleepy and huddled together for warmth, they should be put in the warm brooder or substitute. After they have become warm and well rested, they are again put back on the grass for more air and exercise and pasturage, and again taken in just as soon as they appear chilly or inactive. No matter how cool the air is, if the weather is pleasant and there is tender grass on the ground, put them out and do it repeatedly for the first two days. A good start is of the greatest importance. After that they can remain out of doors within an inclosure on grass during the warm part of the day. As they grow very fast, very much faster than a Pekin duck, they are able to do without artificial or hen-mother heat when about a week old. Then they can be huddled out during the day and put in a vermin-proof house at night and during stormy weather.

In this way the broods can be managed more easily and with less loss than when the same number are divided up among and brooded by hens. If sufficient attention cannot be given them, hens or geese may be used as mothers and may be penned on fresh ground with them for the first few days or week and shut in buildings at night. Some tether the hen by a string tied to her leg and to a peg driven in the ground. The goslings are confined near her by board yards at first and then allowed to range at will. They come back to her frequently and are thus kept where they belong.

I believe that goslings are better off if they receive nothing but tender grass and water the first day they are put out or before they are 48 hours old. The next day they should be fed two or three times, but very lightly, with scalded cracked corn. This is probably as good food as can be given from then on, provided they have at all times an abundance of tender grass to eat, and the amount of cracked corn fed is such as will always leave them hungry for grass. An exclusive diet of grain or dough, without plenty of grass, or too great a quantity even with grass, will spoil them—cause them to lose the use of their legs and die. If grain is fed sparingly while they are young, and grass is three-fourths of their food, few will be lost.

As a rule, it is not best to hatch goslings until you can put them on new grass. If you can, however, give them all the green rye or lettuce they can eat from the time they are removed from the nest, the earlier you get them hatched the better, as it is the earliest goslings that bring the highest price and give the most profit, if sold at the right time and in the right market. Where the object is to raise show birds of great size and frame at maturity, it may be best to feed oat meal, gluten feed and bran liberally, as well as corn and grass or clover; but there will be less uniformity under this feed and more loss. Ordinarily, not over two or three per cent should die after the second or third day. Most experienced goose-raisers say they are about as sure to raise goslings as colts, accidents excepted.

Goslings must have water always at

hand for sale. HOOD FARM, Lowell, Mass.

HOOD FARM COWS are deep and persistent milkers, and the herd contains more of the blood of the great World's Fair winners Brown Bessie and Merry Maiden, than any other herd in the world. You may increase the quantity and improve the quality of your dairy products by introducing this blood into your herd. Young bulls, rich in butter fat, are also for sale.

hand to wash down their food, and it should not only be renewed very frequently, but given in such a way that they cannot get into it. By yarding them in a fresh place every day, by means of a strip of netting a foot high it is easy to give them all the tender grass they require. A box or shed should be provided within their yard for shelter from wind and sun. If they cannot get out of the direct rays of the sun whenever they choose, they suffer, their growth is much hindered, and they may die.

It is useless to attempt to raise geese successfully if they are afraid of their attendant. They should be treated with great gentleness, and have full confidence in their keeper. A nervous, quick-motivated, excitable or rough person may keep them so disturbed that they cannot thrive.

If cooped at night in a tight house, or one having open windows protected by wire netting, loss from dogs, cats and other animals is prevented, but the bedding must be renewed daily and removed frequently. If this is not done or they are crowded too much and do not have sufficient air, their growth will be much less than if left out in the open. To make the best growth they should have succulent green food before them while they can see to eat. If shut in for a short time morning or evening, or on a stormy day, they should have a continual supply of freshly mown green rye, oats, clover or corn fodder. Otherwise they will fret and lose much in weight.

They may be pastured from the start on growing rye, oats, millet and other green crops to their great advantage, or may be turned out to those crops when grass becomes old or dries up in hot weather. If shut off the plot before it is eaten too close, it will grow up again and may be thus eaten down several times. Such crops should be thickly sown. Mr. James Rankin, who grows rye and oats for his ducks, sows five bushels of seed to the acre. By planting one piece after another, a succession of green crops may be had (even in the South) that will furnish the best of succulent food through the hot weather, and even in winter.—Samuel Cushman in the Country Gentleman, Providence County, R. I.

Making and Keeping of Cider.

To make good cider, good, sound, well ripened, clean apples must be used, and no others. It is better to crush them than to grate them. Everything about the mill with which the apples, pomace, or cider can come in contact must be clean—perfectly so. The apple juice, when expressed from the pomace, must be filtered so as to take out every particle of apple or solid matter which may be floating in it. Cleanly washed sand is sometimes used, and animal charcoal; but probably a mass of perfectly clean cotton, or cotton cloth of any thickness will be found to be as good as anything. The cider should be expressed from the pomace as quickly as possible after the apples are crushed, and the juice will be nearly as white as water if it is immediately filtered. If the pomace is allowed to stand some time after crushing the apples, before pressing, the cider will be colored and not as good.

When made as above and filtered, the question is, how to keep and cure it for use. First, a clean cask. If it has been used for cider before, it must be wholly freed from the flavor of its previous contents. This may be done by burning out the inside; no other way is certain, though long soaking in water and washing may make a tolerably clean cask; but it is better to use a new cask, or one that has been used for spirits. Before filling the cask, adapt a faucet to it, so that the contents can be drawn off three or four inches above the bottom. Fill the cask perfectly full, and place it in a cool cellar, where it will not be moved or in the least disturbed, and fit a bung with a small aperture, so that the gas may escape while fermentation is going on. Before fermentation has ceased, bung up perfectly tight with a small faucet, or its equivalent, through or near the bung, by which air may be admitted when necessary; but this must not be opened except when it is impossible to draw through the lower faucet without admitting air, and then admit as little as will answer.

Cider fit for drinking cannot be made in warm weather, unless you have a much cooler place than farmers' cellars generally are to store it in. A temperature below fifty degrees is indispensable. With such places for storage as farmers are likely to have, cider should not be made until November.

When made, filtered, and stored as before described, it should not be drawn or in any way moved or meddled with until it is cured, which will not be until May following, and it will be still better to let it stand longer before drawing from it.

You can draw from it some time before it will be necessary to admit air through the faucet top of the cask, as the gas generated will force the cider out; but when it ceases to do that, then a little must be admitted, but the cider must

be kept closed except when it is necessary to admit air to the cask.

Thus it will be seen that to have good cider, we must have the pure juice of good, ripe apples, in a perfectly clean cask, placed in a position in a cool cellar where it will not be moved or jarred, and after the apple juice has gone through about three-quarters of its period of fermentation, tightly closed, and then let it cure until about May 1. If the air faucet is carelessly left open, the cider is spoiled—reduced to the condition in which we generally find cider—unfit to drink.

Most farmers can add to their receipts by using in the way indicated, sound apples which are too small or ill-shaped to be merchantable.

IMPROVING WEAK CIDER.

Formulas and methods for the improvement of cider "too weak to stand up," as the phrase goes, are floating around continually. Some are of value, but the majority are worthless. Experiment, on a small scale, soon demonstrates the use or uselessness of the advice offered. Here is one to restore cider deficient in strength: To improve the flavor of weak cider, or to render ordinary cider more vinous, add to each hoghead 1-2 gallons of good brandy or rum, with 2 ounces of powdered catechu (dissolved in water), 10 pounds of good moist sugar or honey, 1-2 ounce each of bitter almonds and cloves, and 4 ounces of mustard seed (all in powder). These must be well rummaged into the liquid and the whole occasionally stirred up for a fortnight, after which it must be allowed to repose for three or four months, when it will usually be found quite bright. Should this not be the case, the cider must be "fined" with a pint of isinglass finings, or a dozen eggs and allowed to rest a fortnight.

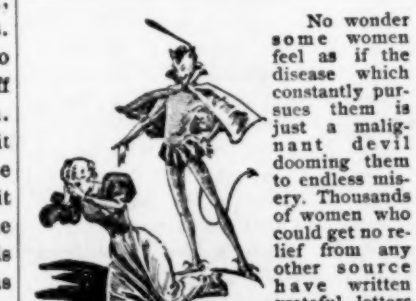
If the cider is preferred pale, the catechu must be omitted, and instead of isinglass a pint of skimmed milk is to be used as finings. When desired of a pinkish tint, one ounce of cochineal (in powder) may be added instead of the catechu.

PLANT LATE VARIETIES.

Clear days, together with cool temperature, are best for successful cider making. Hence, we should plant varieties of fruit that can be made into cider late in autumn or early winter; cider made in winter keeps sweet better than that made in early autumn.—American Cider and Vinegar Maker.

Notify the Publisher When You Move.

The Post Office Department has decreed that second, third, and fourth class mail-matter shall no longer be returned to the sender or reforwarded to another address until extra postage has been prepaid. The classes of matter affected by the new rule include newspapers and all periodicals, books, pamphlets, circulars, and the like, and merchandise. Where the matter held is of "obvious value" the sender is to be notified, if possible, and a chance given to pay the postage due. The object of the rule is economy. Its result will be to increase losses by mail and distress proportionately the patrons of the post-office. Nevertheless, it is proper to remember that the classes of mail-matter affected are those which cause the deficit in the department's annual report. It is the abuse of the privileges granted to second-class matter especially that makes the department run behind, and a reduction in the cost of handling that class of mailable matter may be worth buying at the cost of some inconvenience.—Harper's Weekly.



No wonder some women feel as if the disease which constantly pursues them is just a malignant devil dooming them to endless suffering. Thousands of women who could get no relief from any other source have been given grateful letters to Doctor R. V. Pierce, chief consulting physician of the Pierce, Fitch and Surgeon Institute, of Buffalo, N. Y., telling him of the benefits received from his wonderful prescriptions and the careful professional advice which he sends by mail without charge.

A lady living in West Eaton, Madison Co., N. Y., Mrs. Mattie A. Walker, in a recent letter to Dr. Pierce, says: "I write to inform you what your remedies have done for me; but they have helped me so much that I know not where to commence or where to leave off, as I had such a complication of ailments. For three years I had such bad spells I thought that if I died I should be glad to get breath once more. I had dreadful pains in the top of my head, and was going to happen—I could not tell why either. I could write a dozen sheets full and not tell all the dreadful things I suffered, from female weakness, constipation, asthmatic spells, and rheumatic neuralgia. "I advise all who are suffering not only to use Dr. Pierce's medicines, but to get his advice also, as it has helped me so much I cannot express in praise of both the advice and the remedies. I look on your medicines as being God-sent, and will ask God to guide suffering humanity to the right relief."

POTASH.

To underfeed and overwork an animal is not economy. It is equally unwise to treat your soil in like manner. In these days of small profits it is necessary to get the largest crops from the least number of acres. This can be accomplished by thorough cultivation, suitable rotation and proper use of fertilizers. Failures occur whenever fertilizers are deficient in Potash.

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BOSTON, AUGUST 6, 1898.

Persons desiring a change in the address of their paper must state where the paper has been sent as well as the new direction.

Removal.

The offices and composing room of the MASSACHUSETTS PLOUGHMAN have been removed to numbers 10 and 12 Federal street, corner of Milk street, the publication office being in Room 12.

The new location is easy of access, being directly opposite the Boston post office, nearly every line of street cars passing the building, and is on the direct route between the two union railroad stations. The offices on the fourth floor are readily reached by elevator, and a call from our friends and patrons will always be welcomed.

If each man was willing and anxious to learn from those who know some things better, how wise we should all become.

COMFORTABLE animals are the ones which pay dividends. There is a solid money value in comfort as any thoughtful farmer knows.

If the milk yield shrinks much at this time it will not get back again without considerable trouble. Best to keep it up by feeding corn fodder and a little grain every day.

At this time the hammock and rocking chair are turned to good account by the city boarders, who divide their valuable time impartially between eating and loafing in a manner very acceptable to themselves, but a trifle tantalizing to the young man of the farm whose nearest approach to a rocking chair is the jolting seat of the rake or mower. Never mind, John; you can average up more solid enjoyment the year around than any city man of the lot, provided you take hold of country life by the right handles.

EVERY new kind of farm machinery, every new process and every item of scientific discovery about agriculture makes farming a more brainy business than before, and a man needs to be a little smarter and wiser than ever before in order to keep up with the procession. The time is coming when the man without ability to get hold of new ways, will be crowded out into undeveloped regions, or will fall into the ranks of those who hire out to the men who can handle modern methods in a business way.

THIS is the harvest season of the seashore farmer. Whether he takes summer boarders or merely raises things for them to eat, he must take in most of his cash income during July and August. Crops must be planted, chickens hatched and cows managed long before, so that they will yield their greatest product during the short market season. Whatever is not sold then must be shipped to distant points often to be sold at wholesale and with small net returns. Hence the seashore farmer works cheerfully through the hot spells, comforted by the knowledge that the more heat the more dwellers at hotel and cottage and the more appetites to be satisfied from the products of the farm.

WITH Cuba as a protectorate and Porto Rico as a province according to the peace proposals now being considered, the United States will have made a long step towards its evident future predominance in this hemisphere. The Philippines might be a kernel easily snatched from the fire, but they would prove a very hot morsel to hold in opposition to the jealousy of all Europe together with the savage natives of the Philippines. With the Hawaiian Islands and perhaps a number of coaling stations in Spanish possessions, the United States will have made a good enough beginning in the Pacific. For the present, Uncle Sam will have his hands full settling affairs in the newly acquired territories.

WHEAT growers of this country must this year face the offering of a big crop both at home and abroad. Hardly a large wheat producing country in the world but has prospects of a good yield. The wheat of previous crops has been pretty well cleaned up by the recent unusual demand and the market will be able to receive a big supply before getting filled up. But large dealers are expecting that the coming abundance everywhere will so check our export of the grain that prices will be kept down throughout the year. The prospect of a speedy termination of the war puts an end to the extra demand from that source. Fortunately, there is a probability that general industry and business enterprise will be active and prosperous. There is little at present to unsettle business conditions. Even a low price for wheat, Northern America's greatest commercial crop, will not cause bad times, when other factors of the situation tend toward prosperity.

How's This!

We offer One Hundred Dollars reward for any case of Catarrh that cannot be cured by Hall's Catarrh Cure.

F. J. CHENEY & CO., Toledo, O. We, the undersigned, have known F. J. Cheney for the last 15 years, and believe him perfectly honorable in all business transactions and financially able to carry out all obligations made by him. WART & TRACY, Wholesale Druggists, Toledo, O. WALKING, KINMAN & MARVIN, Wholesale Druggists, Toledo, O. Hall's Catarrh Cure is taken internally, acting directly upon the blood and mucous surfaces of the system. Testimonials sent free. Price 75c per bottle. Sold by all Druggists.

CURRENT TOPICS.

This year has seen the passing of two of the world's greatest statesmen, Gladstone, whose death brought sorrow to the whole English speaking world, and now Bismarck, Germany's greatest statesman, who has died within the week. Bismarck was a typical German, strong both in body and mind, with an iron will, a masterful purpose, undaunted by the greatest obstacles, overcoming every difficulty by fair means or foul. His parentage was aristocratic, none of his ancestors showing any special greatness. Before the rise of Bismarck to power, Germany was broken into many small principalities and dukedoms, and its forces being thus scattered, it lacked power and influence. Bismarck early made it the purpose of his life to effect the unification of Germany under one sovereign and make of it a great empire. This purpose was accomplished but by means of war and turmoil. By a war with Austria, another with Denmark, and a third with France, all instigated by this iron-willed statesman, he entirely changed the face of Europe, gathered together the scattered German states and bound them into one powerful German empire, under one sovereign, raising it to a power and influence hardly excelled by any other nation. His greatest ability, however, was constructive rather than administrative, for when the troubled times of war were over and less forceful measures were necessary for building up the empire, he failed to accomplish as great results. When William I. died, his successor, Emperor Frederick, proved a man of more liberal ideas, and there was a lack of harmony between the emperor and Bismarck. The former's early death, however, brought the present ruler to the throne, William II., who, being young and autocratic, brooked no interference or suggestion, and soon retired Prince Bismarck to private life, although to him, more than to any other man, was due the greatness of the German empire. The lasting value of Bismarck's life work is yet to be determined. Whether his work tended to the advancement and betterment of mankind is not yet clear, but he may be regarded as certainly one of the greatest constructive statesmen in the history of the world.

Spain's willingness to consider terms of peace has been promptly met by the United States and an outline of the conditions acceptable to this country was forwarded through the French ambassador, who was authorized to act as Spain's representative. They were substantially as follows:

As to Cuba, it was demanded that Spain release her government, possession and control. It should be noticed that nothing was said of Cuban independence and that the acceptance of this position leaves the United States free to deal with the island as it may deem best.

Porto Rico, with the small islands adjacent and embraced within her jurisdiction is to be ceded unconditionally to the United States.

One of the Ladrone Islands likewise is to be ceded to the United States as a coaling station. These three conditions being granted by Spain are to be known as part payment in lieu of the full indemnity. What further payment shall be required is to be determined by a commission having authority to act for the President subject to his approval.

Whether Spain shall retain possession of the Philippines as a whole or in part is left to the commission to determine. The reason for deferring the decision as to the future of the islands in this fashion is because the administration is not yet satisfied itself; it is not clear at this moment what sound policy should dictate in the matter.

Meanwhile, and until the commission has satisfactorily disposed of the future of the islands, the United States is to exercise a military government over Manila harbor and bay.

The commission will be actually a peace commission and will prepare the treaty which will terminate formally the war with Spain. At last reports, Spain has accepted the terms of peace with some unimportant changes, but believing it necessary for the success of the negotiations, the Spanish government is desirous of maintaining the greatest secrecy in regard to the matter. It is now confidently expected that peace will be declared within a short time and that the Spanish war will soon be a thing of the past.

While there will be no money indemnity required by the United States of Spain, she will lose all claim to any island in the West Indies. Immediate evacuation being demanded. The greatest danger point in the whole situation is the Philippines. The Spaniards are by no means the only ones to be reckoned with in this connection for aside from complications which might arise with other European nations, the natives of the islands, made confident by repeated victories over the Spaniards, will resist any attempt of the United States to acquire these islands. From despatches received from General Merritt and Admiral Dewey, it appears that the 20,000 soldiers which have been prepared for service in the Philippines and which have already arrived or are on the way, will be none too large a force and if the insurgents should prove troublesome, a much larger force will be required. The United States government feels that it has assumed a moral obligation, not only towards the foreign residents at Manila, but also towards the unprotected classes of the Spanish community, women, children, nuns and priests. Therefore, when information came that the insurgents were threatening the lives of some monks, orders were sent to the American military commander to look into the matter and to

act in the interest of civilization and humanity. As, according to report, the insurgents have shown particular hostility toward the monks, it is a reasonable expectation that before long a collision will have occurred between themselves and the American troops if the latter undertake to interfere in the execution of the vengeance of the insurgents.

General Merritt has already asked that his force be increased from 20,000 to 50,000 and it may be that his request will be granted and some of the Eastern forces, which have not as yet seen active service, be sent to him. It is believed to be necessary even if our claim is limited to the terms submitted to Spain, to furnish to General Merritt a larger force than he has now at command. It is realized that 20,000 soldiers can scarcely be expected to maintain United States possession and protect the inhabitants over a territory of this extent for it must be remembered that the bay of Manila is twenty-five miles deep from the entrance at Corregidor Island to the city of Manila at its head. It will also be necessary to possess and protect a zone extending some distance back of the city in order to make sure of the preservation of the water-works. Of course a considerable force would not be necessary if the insurgents under Aguinaldo were brought to realize that their interests lie in permitting undisputed possession of this territory by the United States. But it will be expecting too much of the native character to keep before the eyes of the insurgents the rich loot to be had in Manila without an adequate force to protect the place. Then with the growing heat and dampness, it is to be expected that illness will develop among the troops; not to the extent that it appeared at Santiago, but sufficient to require some of the men to be invalided home and their places to be taken by fresh troops from the United States.

Admiral Dewey has received word from Capt.-Gen. Augusti, the Spanish commander, that he is willing to surrender so soon as he can do so honorably. It is believed that he will make only a show of resistance. Admiral Dewey expects to take the city without losing a single man. Should Dewey and Merritt begin the attack Augusti will propose to capitulate on the following terms: The Spanish troops to march out with the honors of war; the soldiers and officials to be permitted to return on parole to Spain, and an assurance to be given that the lives and property of Spaniards will be protected from native attack.

General Miles' progress in Porto Rico has been something of the nature of a triumphal march. The Porto Ricans, in most cases, receive the Americans gladly and the resistance of the Spaniards is a feeble one. The railroad between Guanica and Ponce was captured and Ponce itself occupied by the American troops. The latter city is the largest on the island, although San Juan is the capital. Business is now progressing there without interruption. The outposts of the American army have been advanced on the road towards San Juan and the large town of Juan Diaz has been occupied by the Americans, the townspeople meeting them with great joy. San Juan is said to be strongly fortified but it is probable that now the terms of peace have been practically decided upon, there will be no necessity for vigorous measures.

The soldiers at Santiago are suffering from fevers of various kinds, the number of cases running as high as 5,000 at times. Much criticism is being made of the way in which the sick and wounded have been sent north, the transports furnished having been complained of as wholly unfit for the service and not fitted with the proper supplies of food and medicine. The Seneca, Concho and Alamo were especially complained of and an investigation has been set on foot as to the truth of the reports, and as to who should bear the responsibility for this mismanagement. There is considerable friction between the Red Cross people and the regular army medical corps.

A company organized to extract gold from sea water by some mysterious process carefully guarded by its inventor, now finds itself in trouble by the disappearance of its chief promoter, Rev. P. F. Jernegan, who has carried with him a considerable amount of the funds of the company. He sailed for that mecca of delinquents "promoters," Europe, and although said to have been bound for Paris, he unaccountably disappeared between Havre and that city. The inventor of the wonderful process and the only one who possessed sufficient knowledge of it to manipulate the machinery disappeared first, and Mr. Jernegan says that he has gone in search of him. The works at North Lubec, Me., have been closed and the stockholders, who had the most implicit faith in Mr. Jernegan, are wondering what the outcome will be. There is considerable money on hand, and the officers of the company assert that everything will ultimately be straightened out and the stockholders lose none of their original investment. The report is that Mr. Jernegan has been misled in the matter and that the real culprit is the man who first disappeared, variously known as Fisher and Phelan. The works at North Lubec are being investigated to find out if the process is a bona fide one, with real results, or whether it is all a hoax.

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Are gaining favor rapidly. Business men and travelers carry them in vest pockets, ladies carry them in purses, housekeepers keep them in medicine closets, friends recommend them to friends. 25c.

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Literary Notes.

THE AMERICAN MONTHLY REVIEW OF REVIEWS for August reviews the Santiago campaign by land and sea from start to finish. Winston Churchill, who wrote so acceptably on Admiral Dewey for the June REVIEW, describes in this number the wonderful battle with Cervera's fleet, and this article is illustrated in part from Hemmest's remarkable photographs of the Spanish ships taken the day after the fight. John A. Church, formerly of the ARMY AND NAVY JOURNAL, contributes a full account of the Santiago land fighting, and his article also is illustrated from new photographs. Park Benjamin writes on the work cut out for the Eastern squadron under Commodore Watson. Altogether, the REVIEW again shows its ability to keep well abreast of all important military and naval movements, and to exhibit a clean pair of heels to all its competitors in magazine-dom.

In the old Boston Token of 1811 appeared two sketches which have never been attributed to Hawthorne, but which give unmistakable evidence that he was their author. One of these tales, entitled "The Haunted Quack," by Joseph Nicholson is given in full with a critical account, by F. B. Sanborn, in the NEW ENGLAND MAGAZINE, for August, as "A New Twice-Told Tale." "It was," says Mr. Sanborn, "the rough and humorous sketch which he afterwards worked up with so much variety in 'Dr. Heidegger's Experiment,' 'Dr. Grimshawe's Secret,' 'Septimus Felton,' and 'The Dolliver Romance.'" Warren F. Kellogg, 5 Park Square, Boston, Mass.

The August issue of TABLE TALK furnishes excellent and timely reading and helps for the housewife. It opens with an interesting article on "Way-side Wanderings and Wedge-Wood Study," by Martha Bockee Flint, that will interest most women; "Let Fall the Curtain," by Virginia Lyndell Dunbar, who is widely known to the reading public. The article is of practical help to the housewife. Among others are "The Olympian Banquet," "Peach Dainties," "Home Laundry," etc., etc., besides its other regular practical departments so ably conducted by its regular staff of editors. A sample copy will be sent free to any of our readers addressing TABLE TALK Publishing Co., Philadelphia, Pa.

Read and Run.

—A great wheat crop is certain in Minnesota, North Dakota and South Dakota.
—A party has started to search the northern coast of Alaska for traces of Andre.
—The deficit for the year would have been \$43,000,000 had it not been for the war.
—A steamer line is to be opened between Mobile and Cuba when the war ends.
—Steamers are to begin running between San Diego and Japan about December 1.

—The number of ships between New York and Copenhagen is to be increased to twenty.
—The number of new loan subscribers is 321,300, New York leading, Massachusetts second.
—Henniker Heaton, the English parcel reformer, is moving for a low rate cable system.
—The Red Cross officials are accused of responsibility for the yellow fever epidemic at Siboney.

—Sampson has cabled that the Maria Teresa will be floated and taken to Guantanamo at once.
—Professor Bell and party are searching Sable Island shore for the bodies of the La Bourgoigne victims.
—Concessions to the English syndicate in China include rights to the greatest coal and iron deposits of the world.
—Santiago merchants are nervous over the rumors that United States troops are to be withdrawn. Shafter has asked the President to reassure them.

—General Merritt wants 50,000 men to meet an emergency in which the insurgents around Manila may figure; the original force assigned was 20,000.
—BASS POINT AND NABANT.
People intending to enjoy a day's outing and particularly the delightful sail from Lincoln Wharf to Bass Point or Nabant, should take the early morning boats and return on the early afternoon trips, and thus be sure of a pleasant sail free from the discomforts of the crowds which patronize the boats on the first afternoon trips. The musical program is the great attraction at these popular resorts; concerts are given every afternoon and evening by Laticia's Naval Brigade Band. Good boating, bathing, fishing, fish dinners, beautiful drives, magnificent scenery, cool breezes, and concerts and free dancing are a few of the inducements which are offered for visitors to these resorts. There are roller coasters, chutes of all descriptions, merry-go-rounds, trolley swings, and countless other contrivances for providing sensational amusement. The steamers of the Nabant Line leave Lincoln Wharf, Commercial Street, every 15 minutes.



Washington News.

A State Department report from the Russian consul-general to Russia, indicating that that government has largely reduced the duties on agricultural machinery, fertilizers, etc., shows that Russia is trying to keep to the fore in matters relating to farming, and wishes to get her share of the international farm trade. The manufacture of agricultural machinery in Russia has made great progress owing to the protective tariff, but is still unable to satisfy the demands of the agricultural industry, as many machines and implements are not manufactured there at all. Of late great quantities of agricultural machinery and implements have been shipped from merchants in this country to Russia, where the virtue of American tools is beginning to be highly appreciated. All new kinds of machinery intended for export are admitted entirely free in order to acquaint landowners with the most recent improvements; also chemical fertilizers and other chemicals for use in exterminating insect pests or fungus diseases are admitted free.

THE AMERICAN FRUIT INDUSTRY.

The numerous requests from farmers and fruit growers for the report of Mr. W. A. Taylor, assistant Pomologist of the Department of Agriculture, on the fruit industry of the United States, has necessitated a reprint of this part of the Agricultural Yearbook for 1897. The bulletin makes a handsome pamphlet of fifty-five pages, containing a history of our domestic and foreign fruit trade and the substitution of domestic for foreign fruits; also notes of interest to apple exporters, being historical and descriptive of ten varieties known to be most suitable and profitable for the export trade. The bulletin contains figures and conclusions not found in the Yearbook article on this subject; in fact, information that has never before been brought together in the form in which it appears and for which there are frequent inquiries. Mr. Taylor devoted a page or two to telling what the early Pilgrims thought of native American fruit. Roger Williams found the strawberry "the wonder of all the fruits growing naturally in these parts. In some places where the natives have planted I have frequently seen as many as would fill a good ship within a few miles' compass." William Wood, who came in 1629, reports: "There is likewise strawberries in abundance, verie large ones, some being two inches about; one may gather half a bushel in a forenoon. In other seasons there be Gooseberries, Bilberries, Raspberries, Treecherries, Hurtleberries and Currants; which being dried in the Sunne are little inferior to them that our Grocers sell in England." Brother Wood seems to have been of a discriminating taste for his praise of our fruits is not unmixt with criticism. He says: "The Cherrie trees yield great store of Cherries which grow on clusters like grapes; they be much smaller than our English Cherries, nothing near so good if they be not fully ripe; they so furre the mouth that the tongue will cleave to the rooffe and the throat was hoarse with swallowing those red Bullies, as I call them, being little better in taste. The Plummes of the countrie be better for Plummes than the Cherries be for Cherries; they be black and yellow about the bigness of a Damsone of a reasonably good taste." William Penn mentioned chestnuts, walnuts, plums, strawberries, cranberries, whortleberries and grapes growing naturally in the woods, and questioned whether it was best to improve the fruits of the country, especially the grapes, by the care and skill of art or to send for foreign stems and sets already approved. He thought it most reasonable to believe that a thing grows best where it grows naturally, and that it would hardly be equalled by another kind not naturally growing there. The bulletin contains five pages of handsome colored plates, including the white raisin grapes, muscats and muscates, five varieties of prunes, four of figs, olives and a page devoted to almonds. It also contains some valuable figures relative to the exports of green and dried apples in different years, exports of vinegar, cider and canned fruit, preserved fruit, nuts, etc. The ten varieties of apples appearing from data gathered by the Department best suited for the export trade are Baldwin, Ben Davis, Jonathan, Northern Spy, Rhode Island Greening, Roxbury Russet, King, Winesap, Albemarle or Newtown Pippin, York Imperial or Johnson's Fine Winter, the two last varieties being equally well known by either title, although until lately it was not supposed that the Albemarle and the Newtown Pippin were from the same stock and identical.

LOOKING FOR SPICY CANTALOUPE.

The readers of the PLOUGHMAN will remember that sometime ago Secretary Wilson procured, through an agent of the Department, a couple of carloads or more of foreign seeds from Turkistan and Russia. These seeds were distributed far and wide among the farmer experimenters of the United States and some of them are developing very interesting qualities and are being watched with great interest by their godfathers. A special account was made by the Department agent in gathering melon seeds in Russia, from which country many of our finest and

most delicious varieties and strains of melon seeds have come. The department distributed a large number of these seeds over the sandy melon sections of New Jersey and Delaware, where they know how to raise melons. They were planted and in due time broke ground and those which escaped the melon bugs and other nuisances are growing finely. Now when they are beginning to show their characteristics, the department sends another man to wander about over the fields where they are growing and take notes on their appearance and as to whether they like America or not. As they belonged to Uncle Sam and had the special privilege of coming in free of duty whereas other melons had to pay duty, it is probable that they will do their best. In any event that agent who is watching them from week to week has a large knife which he constantly carries and as soon as those melons show any signs of ripeness, he is under instructions to make government tests of their insides.

CORN CULTURE IN THE SOUTH.

Can anybody think of what appears to be a more threadbare subject than corn upon which to write a bulletin? Every agricultural paper in the land has something in every issue about this king of cereals and it would seem that there is nothing new to be told about it. However the Department treats the corn in the South, only, and brings out a fact which may not generally be known, that the South has and probably can produce the largest corn yield per acre in the United States. It is true that the average yield of corn per acre in the South is not equal to that secured in the corn states of the Northwest but that this is owing more to methods of culture than to difference in soil and climate, is evidenced by the fact that the largest yield of corn on record, 237 bushels per acre, was grown in South Carolina, and that the second heaviest yield of any country in the country (per acre) was in Issaquena County, Miss. In the South cotton has been the factor operating to reduce the acreage yield of corn. The best land and the best labor have been given to cotton, corn taking only such land, labor and attention as could be spared from cotton. Corn has been only secondarily as a crop. The bulletin is a summary of the best information obtainable in regard to this crop throughout the South.

FEED THE FISH.

Probably hundreds, or thousands of dollars have been wasted in stocking lakes and rivers with young fish in which no plants grew upon which they could feed, and Secretary Wilson is on the right track when he proposed to co-operate with the Fish Commission to the extent of finding out what aquatic plants are suitable for propagation in our water bodies which will serve as a food for the fish with which it is desired to stock these waters for the benefit of the people living near them. This is by no means an easy task, but men are now at work in the Great Lake regions and other water sections, and by fall something will be known as to what they propose should be done. This seems a matter which should have been carefully studied by the Fish Commission, but small matter who does it so the end is accomplished. GUY E. MITCHELL.

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PLANT BREEDING. Being Five Lectures upon the Amelioration of Domestic Plants. By L. H. Bailey, Professor of Horticulture in the Cornell University. 293 pages, 20 illustrations. Price to our readers, 75 cents.

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When I went to you last September I had been told by two physicians of Boston, one a specialist, that I was suffering from a fibroid tumor, that it was as large as my head, and that the only relief for me was a surgical operation. Having a great dread of the knife, I consulted you; you told me the growth was very large and so I was glad that it would take time to remove it but you would guarantee a cure with your method of absorption.

I gladly commenced with your treatment. I was terribly bloated all over, and could scarcely walk at all, but in less than two weeks I could see an improvement, which steadily continued until the tumor was all gone.

My waist has been reduced from an abnormal size to twenty-two inches.

While taking your medicine I have been able to go out every day in all kinds of weather; I can now walk as well as I ever could and feel better than I have for years.

I money can never pay for what you have done for me, and I wish I could induce every one with a similar trouble to try your treatment. You have made a life worth living for me, and I can by my testimonial put others in the right way, it will be a pleasure for me to do so. And you are at liberty to refer me at any time.

Very truly yours,

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—Canada's frontier defence committee is to resume its labors.

THE HOUSEHOLD.

WHO LIKES THE RAIN?

"I," said the duck, "I call it fun, for I have my little red rubber on; they make a cunning, three-toed track in the soft, cool mud. Quack, quack!"

"I," cried the dandelion, "I. My roots are thirsty; my buds are dry. And she lifted her little yellow head out of her green and grassy bed.

"I hope 'twill pour! I hope 'twill pour!" Croaked the tree toad at his gray bark door; "For with a broad leaf for a roof I am perfectly waterproof."

Sang the brook: "I laugh at every drop, And wish they never need to stop, Till a big river I grow to be, And could find my way to the sea."

SOME OF NATURE'S WAYS.

BY MARY F. BUTTS.

"We need no longer think of the plants as having been made once for all: we may think of them as having grown and improved, and almost invented; and that idea immensely deepens the interest with which we can watch all their innocent ways and curious, half-reasoning, innocent devices." So says Grant Allen. It is especially a delight to watch their "innocent ways," when one is living in close companionship with them; and their bewitching changes and developments are noted with the loving eyes of a friend and neighbor. No wonder that the early folk-lore is so saturated with the marvelous! What so natural for a simple nature (would that we all were simple!) to imagine an elf in each buttercup blossom, and faries galore hidden aly among the clustering grasses by day, to come forth and dance away the June nights, when all great, unguessed hums should be locked fast in unconsciousness. Here on Buttercup Bank, as we have named our pretty summer home, the flowers are our close friends. Great masses of buttercups make a marvellous contrast with the sparkling, hurrying tide, and starchy daisies on their tall, swinging stems idle with the salt breeze just in from the sea. A few dandelion clocks linger in sheltered hollows; and our interpreter loves to pick them, and, holding up a feathery globe to the wind, watch its tiny seeds take wing.

Sometimes she discourses the while of the wondrous thing, and never without willing listeners. She tells us that the sepa's a dandelion—dent de lion, or "lion's tooth." It is surrounded by fine hairs. These hairs represent what was a calyx in the far-away time when the flowers were individual flowers, each with independent organs; that this calyx, which once protected the flower from intruders in the shape of insects, no longer needed for that purpose, has gradually become adapted to a new use by growing into a little wing by which the seed can be wafted here, there and everywhere. "They are beautiful, but they mean business," says the interpreter, as the fairy things go floating off, each in search of its own bit of mother earth. "And so it is throughout the universe," she continues. "Everywhere beauty subordinated to use." Then she reads to us from the book that until now has been swinging in her hammock, this interesting bit of lore:—

"The reason why plants take all this trouble to get their seeds distributed is a simple one, and yet it might not immediately strike everybody. Why should they not let them drop out upon the ground just underneath their own branches? For the very same reason that the farmer does not crop the same land with corn or turnips ten years running. The plants had unconsciously discovered rotation of crops ages before the agriculturist consciously hit upon it."

"The mother plants must find new homes for their children," the interpreter went on; "and they invent, so to speak, various ways of dispersing their seed."

"I should think so," said the child. "I have carried enough burrs for Mrs. Burdock to plant a farm. I hope she is grateful to me and the rest of the school children."

"You are only one of her servants," said the interpreter. "The sheep family do her errands willy-nilly; and I saw a bunch of burrs sticking to the old mare's tail the other day."

"I think the Sticktights can't be beat for imposing upon unwary travellers," said the mother.

"You mean the burr-marigold," said the interpreter. "I am sure I have distributed thousands of seed for that enterprising family."

"And what funny little claws they have!" said the child, who had learned to see out-door things.

"The milkweeds and chisties and dandelions have the best of it," said the interpreter. "They have all the winds of heaven to wait upon them, and they are fleet couriers compared to you and me; they fly fast and far with the little seeds, and a mother plant in our pasture out here may have a large family growing in the next town."

"It's like folks emigrating, when the old country's full," said the child.

"There are many ways of self-propagation," continued the interpreter. "The strawberry sends out runners, and makes new plants. Many of the wild creepers do the same. Then there are the 'pogon plants,' as somebody has called them. I remember very well playing with the dry capsules of the garden balsam when I was a child. By pressing the right place, the seed-vessel would 'go off' with a tiny noise; and the seeds would go off, too, and find new lands for themselves. The seeds of the pretty roadside jewel-wood get themselves distributed in the same way. The wild geranium is another plant that sends its children flying with a snap of the pod-cradles, meaning, evidently, to give them a good start in life. The wood-sorrel has this peculiarity. A writer in the Outlook says:—

"You will find the seed-pod of the sorrel a wonderful thing when you look at it closely. It has five silks running lengthwise; and behind each one is a row of tiny, shining seeds. The first time I found a ripe pod I pressed it gently between my fingers, and the

seeds at once popped out in all directions."

"The bitter cress," says another writer, "has long, straight, upright pods, like cabbage. When the seeds are ripe, the sides of the pod unroll elastically by the unequal drying of their stringy fibres, and shoot out little seeds after the fashion of porgons, and scatter them to a distance of six or seven feet." Birds carry the seeds of cherries and strawberries," continued the interpreter, "and the wind comes whisking by in the spring, calling to the maple to know if its winged fruit is ready. So, though the plants cannot run from place to place to find new homes for the baby plants, they have many obedient servants, and sometimes help themselves very effectively."—Christian Register.

QUALITY, NOT PLACE.

Said A, "Where I stand between the letters B and D, I'm in the midst of all that's BAD, As you may plainly see."

"How strange!" said merry, laughing E, "When I betwixt them am, I'm tucked up comfortably in BED, And happy as a clam."

"It's quality within ourselves," Then mused the letter A, "And not the place we occupy, That makes us sad or gay." —Mrs. H. M. Greenleaf, in St. Nicholas.

THE HOME CORNER.

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By special arrangement with the BAZAR GLOVE-FITTING PATTERN CO., we are able to supply our readers with the *Home Corner Pattern* at very low cost. It is acknowledged by every one that these patterns are the simplest, most economical and most reliable patterns published. Full directions accompany each pattern, and our lady readers have been invariably pleased with them in the past. The coupon below must accompany each order, otherwise the pattern will not be sent.

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No. 7393—Ladies' Six Gored Skirt.

Figured foulard in sage green and white is here shown with a pretty simple foot trimming composed of three narrow frills of sage green satin ribbon. Having a straight back breadth with each bias edge of gores joined to the straight edges, this skirt will not sag and is, therefore, especially adapted to sheer fabrics, such as organdy, lace net, silk tissue and other light textures, while for washable fabrics it is more than desirable. The front gore is of moderate but fashionable width and separate two narrow gores on each side, which fit smoothly over the hips and fall in pretty folds with the fashionable flare at the foot. The lower edge measures about three and one-half yards in the medium size. Bands of braid, ribbon or insertion, with or without ruffles, ruching or other applied trimming can be used to decorate the skirt in any preferred style. To make this skirt for a lady of medium size five and three-eighths yards of material 36 inches wide will be required. The pattern 7393, is cut in sizes for a 22, 24, 26, 28 and 30 inch waist measure. With coupon, ten cents.

Now that the early autumn styles are in sight the alluring details of fashion in summer dress are second in importance, says the Woman's Home Companion. We are promised blues for the coming gores and millinery; also greens, dark reds, warm browns and blue-tinted violet shades. Reseda will be much worn for dressy gowns, and will be much used in conjunction with glittering trimmings. Gray will hold its own in the autumn shades, and will be one of the best colors for the bright days of fall.

Of course, black is always good, and the really most stylish black gown will this season take on a touch of color or white. The secret in making an effective black and white gown is to use a very little white and a great deal of black if the gown is planned for street wear, and a great deal of white with touches of black if intended for dressy indoor wear. To use about the same quantity of each invariably makes a dowdy effect.

Soft, clinging effects will have the preference over all stiff materials. Cashmeres still have a place in handsome gowns, as do the henriettes and albatroses, as well as the fine serges. Canvas cloths are made softer and show a variety of open-wrought meshes in all the new autumn tints. Poplins are still with us, and those of high silken luster are much used for very dressy wear, especially in shades of gray and green. For dressy black, either satin, poplin or some of the fine bengaline

weaves are shown in preference to the broadcords and moires. Crape effects and crepons are good, and show a tendency to a pretty silken gloss. Ladies' cloth in every conceivable shade will be worn, and many black ones, made solidly or with color, are designed for calling and afternoon affairs. Skirts fit closely about the hips and begin to flare at the knees, with the five and seven gores as the best models, giving the preference to the latter. The fullness is held in narrowly at the back in full gathers or plaits, as the figure may suggest. The very widest skirt will measure not more than four and one-half yards, while the majority will not exceed four yards. The Paquin skirt will hold good all autumn, but the advice for a handsome gown is the plain, gored skirt trimmed according to fancy.

Some of the newest gowns have a real overskirt of quite scant dimensions. Braids of all sorts, in both plain and fancy weaves, will be used in the greatest profusion, and will be applied in all sorts of designs, as well as in straight-up-and-down and all-round effects. Some of the dress skirts show the bottom edge cut in vandykes, either bound or faced back with silk, and beneath is placed a three or four inch ruffle that may be either plaited or gathered. This by the way, is an easy way of lengthening a dress skirt.

Sleeves continue to be tight and well fitted to the arm until the shoulder is almost reached, when trimming may justly not be taken on. They come down well over the wrist, but not so long as a year ago, and have some simple trimming at the wrist.

Bodices still blouse slightly in the front, though the extreme blouse effect is a thing of the past. All waists are plain in the back, and most of them have no seam running directly down the centre, while many of them do away with the curved seam as well. Revers and fancy collars are shown, but the crushed standing collar gives way to the plainer one, and the bow in the back is no more.

There may be many readers who do not know what a comfort-bag is. Only an ordinary little bag filled with useful things in the way of needles, pins, boot lacing, thread, black and white darning cotton, blunt scissors, vaseline, surgeon's plaster, old linen, etc., says the Household.

There were hundreds of them sent away during the last war filled with similar things, and they came to be known as "Comfort-bags." The bag should be of some stout, serviceable material, with a draw-string that can be easily pulled up, and this draw-string must be strong and capable of standing hard usage. Ribbon is entirely unfit for this purpose, even the serviceable silk braid, that slips so easily, wears quickly. There is nothing better than knitting silk that is bought on the spool. It should be twisted into a cord of fairly good size, and it will stand any amount of wear.

Almost every one knows how to make such a cord. It will need at least eight strands of the silk, and these must be more than double the length that you wish your draw-string to be.

Now take one end in your hand, and let some one else take the other end and both twist at the same time in opposite directions, then place the two ends together, and it will twist itself together to make a strong cord.

Put needles of good size into this bag, fine ones will be of no use, and do not forget the darning-needles.

Make a long, narrow cushion for the pins, it is better than a pin ball, even if it does take up more room, but it is well to put in a pin ball, also, that can be carried in the pocket easily. The cushion need not be over two inches wide, and five inches long and the needle book may be attached to one end. Stick it full of pins of the best make, that have good points.

Boot lacing is something that will be appreciated. It is often difficult for us to keep whole ones with stores close at hand. Those of porpoise leather are the best, as they will last quite a while.

The thread should be strong linen, both black and white, and it should be wound on a card, smaller than those for darning cotton, and cut in shape to hold it. This will take up less space than spools, and be more convenient.

Do not forget the darning cotton, nor a pair of blunt scissors.

A small roll of old linen should be put into every bag, together with some surgeon's plaster; and a small tin box of some good salve will not come amiss for bruises or cuts. A roll of clippings from newspapers might serve to while away some tedious hours—not necessarily stories, but something of interest to men outside of war might be very welcome. The custom of inserting a dainty letter, full of sympathy and cheer, to be read in a lonely hour, is a desirable one to retain, and will be deeply appreciated.

"Very few housekeepers have a proper appreciation of the value of cereals that are left from the family breakfasts, and fewer still know how to turn them to account and make not only good and substantial but really delicious dishes from them," said a woman who had acquired much more than a local reputation as a cook and a practical domestic in an exchange. "It is the custom in most households to throw all of the surplus of this sort into the waste bucket, and a more reprehensible practice I cannot imagine. In the first place, all of this material is of great value in the soup kettle if one is kept on the range against the time of need."

"I spent one summer in a household where the dainty and admirable economies of life were carried out to a point that amounted to genius. During that visit I learned to utilize almost every particle of food that came unused from the table. Even that which would, under ordinary circumstances, not find use was looked after. Of course, previous preparation was necessary in order that the articles could be made the most of, but that woman's management was worthy of a diplomat. My first lesson was on a roast left from the previous day's dinner. It was to be served cold for luncheon, and she made a most attractive dish of it. The roast was carefully trimmed, the thick fat and gristle was removed and almost every piece had more or less trimming. 'You may think me fussy and over-particular,' she said, 'but I have learned from long experience with my family that there is little use in putting the usual slices of cold meat upon the table. They clasp and mince and haggle; the meats become unsightly almost at the outset of the meal, and at the finish the plates are covered with scraps that are useless for any purpose. This dish, as I have prepared it, has not a particle of waste meat on it. Even the little lines of soft gristle that run through the slices are taken out, and while it makes very small pieces they are thin and dainty and really appetizing, and you will see after the meal is over that there will not be an ounce of waste on the plates. This method leaves me with a large dishful of fragments, all of which are eatable, save the hardest part of the gristle, and this I put into the soup kettle to simmer until it is nothing but gelatine."

"Out of a seven-pound roast I have made two fresh meals of warm meat for my family of four persons. The first day I cut from one side of the roast, the second day from the other. On the day following we had it cold for luncheon, and for the next morning's breakfast a hash made from some carefully removed trimmings. This day's luncheon and a hot dish with gravy for to-morrow's breakfast and a luncheon dish which we call an alternative will just do for me. I am, therefore, doing pretty well for one first-class roast weighing seven pounds, after the bones were removed. Of course, we are not very great meat eaters, as you see, but it is more in the way I manage it than in the actual quantity consumed. And every one of the meals made from it have been most reliable."

"Now, as for cereals. Here is a dish of hominy. Ordinarily, it isn't taken into account as very useful, but with two eggs, a spoonful of sugar and a bowl of skim milk, which I have put away for that purpose, I will make a delicious pudding for the children's supper. Yesterday there was a large dish of oatmeal left from breakfast, and that I mixed with some milk, sugar and one egg, beat and boiled it, poured it into custard cups and put it away to cool for the children's dessert, to be eaten with a little sugar and cream or maple syrup. It was most delicious and very delicate. To-morrow morning I will have rice for breakfast and what is left, if any, will go into a custard, of which the youngsters are very fond. I put cereals on to cook with a liberal hand, because they furnish the basis for more little desserts than anything else I can employ."

"We eat a great deal of farinose, which is, as you probably know, precisely the same article as wheatena, and made by the same firm in the same mills. Indeed, farinose is merely another name for that article. When we have a surplus, that is either mixed with milk and put in forms or goes into a custard or pudding. We are fond of criddle cakes made from all of the cereals, especially farinose, and often get up little French pancakes with jelly, using either rice or almost any of the grains. Sometimes we have gems made of left-overs mixed with a little flour. These are split when hot with a very sharp knife, and jelly or preserves are spread in with a little butter. The children like these when they come in from school with the usual insatiable and clamorous appetites of growing childhood. Stale bread has so many uses that I can scarcely enumerate them. The most delicious puddings, pies, cakes, custards and griddle cakes are made from them and a score of dishes with which we are all familiar."

Said a physician (reported in "Harper's Bazar"): "I wonder that women fail to appreciate how much women force as well as physical strength they consume in worrying over the little things of life. Look at the mother and housewife as she goes about her tasks, and observe how often she utters an impatient exclamation, how often she sighs over her servant's shortcomings, how often she starts nervously at a noise from one of the children. And each time that she loses control over herself, her nerves, her temper, she loses just a little nervous force, just a little physical well-being, and moves a fraction of an inch further on in the path that leads to premature old age and to invalidism."

If American women would only learn that it is not work but worry that kills! The average woman puts too much of herself into the correction of the children, into the ordering of her household, into the management of her servants. Only a few days ago I heard a mother and housekeeper say that she had "worried herself sick" over the fact that she must change her maid.

"Indeed," she confessed, "I cried myself into a headache after having a row with Norah. These servants will be the death of me yet!" Any of a woman had, with a girl, bright and sensible, and a lady, and an educated one. Still she had descended to a "row with Norah!"

The trouble lies in the fact that we women do not give to each event its just value. If John's coffee is muddy, it is a pity; but it is really not as dreadful a calamity as if John had failed in business. Then why exclaim, "Oh dear!" and clasp one's hands nervously, and allow a deep frown to come between the brows, and tears of vexation to rise to the eyes? These only serve to make John's beverage more insipid to him and to accentuate his sense of personal grievance. If he has no time to wait while a cup of coffee is properly made, let him at least bear away with him the consciousness of a cheerful wife who, by her brightness, tried to make him forget the tasteless quality of his morning beverage. And since the welfare of the nation, or even of one family, does not depend on the proper dusting of a room, why get wildly excited on finding that Bridget has neglected to dust the legs of the hall table?

A clever woman said to an excited sister: "My dear, do not use a pile-driver to pin on a bow of ribbon?" Do not many of us use the pile-driver when

a light pressure of the finger will do the work as well and better? And if we exhaust all our reserve forces over the petty cares, what strength will we have with which to meet the great trials of life? There is one text which it would be well for the nervous and excitable woman to say each day to her often-perturbed self:

"If thou hast run with the footmen, and they have wearied thee, then how canst thou contend with horses? And if in the land of peace wherein thou trusted they wearied thee, then how wilt thou do in the swelling of Jordan?"

The mothers whose children suffer in hot weather from prickly heat will be glad to know that if she will put baking soda into the water in which her children are bathed she may do much toward preventing the arrival of the irritating malady. She should not wait until the rash appears before she adopts this simple means to stop its progress but may all through the summer have some added to the little one's bath water. In one family where this precaution was taken none of the children were troubled with prickly heat during the entire season, although every preceding year the small boys and girls had been literally peppered with the distressing eruption.—Harper's Bazar.

For the children whose summers are spent in a warm climate, there is need to exercise special care in regard to food during the months of July and August, says the Christian Advocate. There is little doubt that in hot weather more harm frequently results from over-feeding than from under-feeding. When the child has passed beyond the period of an exclusive milk diet, there is danger in giving him too soon a too great variety. A baby old enough to talk soon learns to ask for all kinds of food in sight, and if given a taste of this and a spoonful of that, a drink from the mother's tea cup and a piece from the father's slice of cake, he comes to refuse, in many cases, the cup of milk, the piece of bread and the whole-some soup. One delicate little girl of twenty months, who is a source of care to the anxious mother, is taken each meal to the table and fed meat, acid fruits, vegetables and something from nearly all the food of which her elders partake. The mother says that she must give her these things because the little daughter will not touch milk and does not care for bread. But the true secret of the matter seems to be that the baby learned that, by refusing certain things, she could get others—and she does get them, with the result of a bad case, an unhappy expression and restless nights.

A child in age from twenty months to two years needs four meals, the day being divided into regular intervals, according to the time of rising and of going to bed. For two of these meals milk and brown bread form variety enough; for months, oatmeal, farina, rice or some other well-cooked mush, salted and without sugar, together with the milk and bread, is a suitable breakfast; and for the other meal, there should be a bowl of nice clear soup or cream soup, a soft-boiled egg, some extracted beef juice, or some other warm food of similar strength, in addition to the cup of sweet milk and the slice of light whole-wheat bread. To one of the forenoon meals it is safe, if the baby's health is good, to add a little fruit, ripe apples or some stewed. A little melted baked potato or some boiled onion may occasionally be added for variety. But until a child has passed the second birthday, it is far the safer plan, especially in warm weather, to let milk and bread form much the largest part of the diet. If milk positively disagrees some one of the first-class infant foods mixed according to directions usually proves beneficial. The lightest meal of the day, it almost goes without saying, should be in the evening; while it needs to be emphasized that the bread which is fed to a child is only digestible after it is twenty-four hours old.

Older children need only a little meat in extremely hot weather. Eggs and soups form substitutes which tend to keep the systems in better condition than does heavy diet. From fresh ripe fruit, good cold bread, nicely prepared vegetables, sweet milk and the soups and eggs, there may be arranged appetizing and wholesome summer menus.

The following recipes, containing directions for various ways of using peaches, are selected from the Kansas City Star:

Baked Peaches.—Indian peaches are the best. Peel, but leave them whole and stick two cloves in each. Put them in a baking dish, letting the sides touch, cover them with sugar, dot the top with lumps of butter, and bake in a steady heat, not slow oven until done. Excellent cold or hot. The finest possible relish for game or fowl or roast pig, as well as a fine dessert.

Peach Dumplings.—Roll good rich paste into rounds six inches across. Shape the rounds into cups by pinching up the edges. Set the cups in a baking pan, and put in each a big ripe peach on the seed, also a generous quantity of sugar and butter. If you like things very rich, use sweetcake dough instead of puff paste. Cook at the same heat as biscuits. When half done fill up the cups with sugar and butter. Do not require sauce, but may be served with it.

Peach and Tomato Salad.—Take half a dozen firm, white peaches and as many firm, red tomatoes. Peel and quarter, not slice them, and set on ice. Put into a bowl a heaping teaspoon of sugar, a saltspoon of celery salt, one-quarter as much white pepper, and a dust of Cayenne pepper and five drops of Tabasco. Add to this alternately, a little at a time, and all the while stirring, four tablespoons of salad oil and the juice of two lemons. If properly mixed it will be the consistency of cream. Line your salad bowl with leaves of heart lettuce. Peel the peaches and tomatoes in the middle, mixing them agreeably. At the very last minute pour over them the dressing. In

serving, put a spoonful of salad in the middle of a lettuce leaf.

Peach Pyramid.—Peel and halve ripe freestone peaches. Lay enough of them on a flat dish with the hollows up to form a square. Put in each hollow a lump of sugar that has been rubbed on the yellow rind of a lemon until it is well flavored, then a smaller layer of peaches, and fill their hollows likewise. Continue until you have a pyramid. Squeeze the juice of two lemons over it, dust it thickly with powdered sugar and keep cold until served.

The following recipes for cookies are found in Good Housekeeping.

Lebkuchen.—These are from a German recipe, and should be made and packed away in stone jars, at least a week before using. They are a very delectable dainty. One pound of pulverized sugar, one pound of flour, one-quarter pound of almonds, blanched and sliced fine, four eggs, two ounces of ground cinnamon, pinch of ground cloves. Beat the eggs and sugar together very light, then gradually add the flour, to which has been added the spices, then the almonds and citron. Roll out to one-quarter of an inch, cut with round cutters, and bake in a moderate, not slow, oven.

Currant Cookies.—One cupful of butter, two cupfuls of powdered sugar, three tablespoonfuls of sour cream, four eggs, five cupfuls of flour, one teaspoonful soda, one cupful of currant, grated nutmeg. Put the cream, butter and sugar together, add the eggs, beaten light, then the currants (buttermilk will do), then the soda, which has been previously dissolved in a quarter of a cupful of boiling water, stir in the flour, add the nutmeg and then the currants. Roll out to a quarter of an inch in thickness, cut with round cutter and bake in a quick oven.

Ginger Cookies.—One pound of butter, one pound of brown sugar, one quart of molasses, two teaspoonfuls of soda, enough flour for a stiff dough, two tablespoonfuls each of ground ginger, cinnamon, and one of ground allspice. Mix in an earthen bowl. In cold weather place where the butter will melt. Put the butter and molasses in the bowl together and let them become thoroughly amalgamated. Add the brown sugar, let this melt, then remove from the fire and add the soda dissolved in hot water. Now work in the flour, add the spice and when the dough is stiff enough to handle, roll out, cut and bake in a moderate, not slow, oven. The amount of flour used varies, the quality of the flour and the season of the year affecting it materially, more being required in warm weather than in cold. If spices are bought freshly ground from the spice mills, the quantity may be lessened, as a purer, fresher article can be had by going to headquarters.

Beware stumbling over a propensity which easily besets you from not having your time fully employed. Do instantly whatever is to be done and take the hour of recreation after business, never before it.—Sir Walter Scott.

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THE HORSE.

Care of the Team in Summer.

During the summer months farmers and teamsters are liable to have more or less difficulty in keeping the shoulders and necks of their teams from becoming galled and sore. The hotter the weather the more care is necessary. With proper care and vigilance, much of the difficulty can be prevented, and prevention is better than cure. Ill-fitting collars and harness are a fruitful cause of sore shoulders and necks. The collar should fit the neck snug and tight, like a glove fits the hand, with room enough at the bottom to allow the open hand to pass readily inside of it. To secure a perfect fit is of the utmost importance.

Frequently collars are purchased during the winter or early spring when the horses are in good flesh. With regular work the team loses weight and as a consequence the collars are too large. Unless carefully watched, and the collar adjusted, the shoulders will become chafed and bruised.

It is a good plan to wash the shoulders and neck with cold water every evening when commencing work in the spring or during hot weather. The addition of salt or alum to the water will make it more effective in preventing any soreness. It removes the inflammation and toughens the skin.

I have found the use of a pad—either a hair-filled or felt pad—advantageous in the case of a collar that is too large. The harness should fit the collar properly and be fastened tight against it. If the harness are not properly fitted the point of draft will not be at the proper place, and the point subject to extra pressure will soon become bruised.

I prefer a canvas-faced, hair-filled collar without a neck-pad, to anything else I ever used. They are heavy at the bottom, but light at the top, and are made to unfasten at the top when putting on, which is a great improvement over the old way of slipping the collar over the head. The collar should be well cleaned every morning. All accumulations of sweat and dirt should be removed, leaving the surface perfectly smooth. Sore necks can usually be prevented by allowing no weight to rest upon them. Put springs under the wagon tongue to carry its weight, use no agricultural implement that is not balanced. Let a team pull the weight but never carry any of it on their necks. Frequent backing without the use of breaching and choke straps will also cause sore necks. Either have the horses properly harnessed, or do not force them to back with a load.

The style of breaching called hip breaching is serviceable, light and inexpensive.

Make the team as comfortable as possible at all times, especially in hot weather. Use harness as light as consistent with the work required, and have them well fitted. Harness should be cleaned and oiled frequently, using less oil, however than at other seasons, as liberal oiling has a tendency to make the harness hotter than they would otherwise be. Neatsfoot oil is preferable to any other as it will not become gummy. O. J. Vine in the Michigan Farmer.

To be successful in breeding horses requires good judgment and careful management. I am satisfied no colt should be allowed to pass the age of two years before his education is begun. He will yield more readily to your will. He will be better broken and safer, and if carefully well made a stronger and more durable horse than if allowed to run wild until four or five years old. I am not a believer in any patent three-day system of breaking colts. We should not be in a hurry. Teach one thing at a time, and when that is well established, then something else. Have lots of patience, show kindness, establish in him confidence in you. In short, use good horse sense and you will hardly ever have trouble. Right here I want to put in a plea for the horse. How many there are who own and use horses who give no thought to their comfort, but use them as they would a machine, try to grind all they can out of them with as little care, feed and expense as possible! All the return a horse gets for a life of toil and slavery is just what care and kindness is shown him by his master. The horse is a very sensitive animal and can appreciate kindness almost to a human degree. He will do more and better service for you than if ill-treated.

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The Weather Bureau's Weekly Crop Bulletin.

FOR WEEK ENDING MONDAY AUG. 1, 1898.

OFFICE OF THE UNITED STATES WEATHER BUREAU, BOSTON, MASS., AUG. 2, 1898.

The drought has continued in New Hampshire and Vermont, and all crops are now suffering for want of rain. Early potatoes are a short crop on account of the dry weather, and corn and late potatoes are now in danger. There is still considerable grass to cut. Apples are light, in some sections there are none. In remaining portions of the district the weather of the past week has been excellent for all growing crops. Showers have been frequent, in some sections of daily occurrence. These, with the high temperature have been productive of rapid, in many instances phenomenal growth. All crops have advanced rapidly. Corn is very promising. The sweet variety is now being marketed in parts of Massachusetts, Rhode Island and Connecticut, and fodder corn nearly ready to cut. Potatoes promise a good crop, though there is some complaint of blight and rust, due to the excessive moisture, especially in Rhode Island and Connecticut. The showers, with warm, muggy atmosphere have caused a standstill in haying. Considerable of the crop is yet to be secured. The reports of the tobacco crop are favorable; it is in good condition and growing rapidly. The prospect for cranberries seems fairly encouraging, and the general opinion favors an average crop. The season is a week to ten days late. Early apples are plentiful in parts of Massachusetts, Rhode Island and Connecticut, and are now ripe. Winter varieties are an average crop in some parts of these states and in parts of Maine. But taking the district as a whole the crop will be light—not sufficient for local consumption.

Extracts from reports, by counties:

MAINE.

Androscoggin.—Fine growing weather; crops in good condition; grain ready to harvest.

Aroostook.—Crops in good condition; potatoes good crop; apples heavy in some sections.

Cumberland.—Growing weather; too damp for haying.

Hancock.—Potatoes promising; fruit average crop in some sections; moist weather injures hay.

Kennebec.—Crops generally good, but getting too dry; some potato rust; light apple crop.

Knox.—Growing weather; some hay damaged.

Lincoln.—Rain needed; haying two-thirds finished.

Oxford.—Corn and potatoes fair; rain needed; much hay yet to cut.

Penobscot.—Corn good; potatoes fair; apples uneven, some orchards dry, others light crop.

Somerset.—Good crop prospect; too wet for hay; grain doing well.

Waldo.—Growing week; early potatoes light; corn good but late; haying at a standstill.

Washington.—Good condition of crops, except too dry for late potatoes in some portions; some hay to cut.

NEW HAMPSHIRE.

Belknap.—Crops suffering for rain; apples scarce.

Cheshire.—Rain needed; crops look well; haying at a standstill, much to cut; apples and berries light crop.

Grafton.—Good haying, but too dry for crops; grain looks well.

Hillsboro.—Improved crops, but need more rain; much upland hay to cut; early potatoes light.

Rockingham.—Early potatoes light; moist weather delays haying; rain needed.

Sullivan.—Rain much needed; corn and potatoes injured; apples and berries light; hay not yet secured.

VERMONT.

Addison.—Crops improved, but need rain; oats good, harvest well along; early potatoes light; corn good.

Bennington.—Rain needed; oats fair, harvesting in progress; haying well along.

Caledonia.—Potatoes and corn fairly promising; streams getting low, rain needed.

Chittenden.—Warm weather favorable but rain is needed; haying about completed.

Grand Isle.—Grain good; potatoes rusting; onions a fair crop; early apples plenty, late ones scarce.

Lamoille.—Fair crops but rain needed; grain ripening; onions promising; drought unfavorable to grapes.

Orleans.—Crops fair but need rain; apples scarce.

Rutland.—Rain needed; potatoes promise a light crop; oats good, now harvesting; corn fair.

Washington.—Corn doing well; grain fair and ready for harvest; potatoes light unless there will be rain soon.

Windham.—Tobacco good; apples few; early potatoes light; rain needed.

Windsor.—Corn promising; fair crop of grain being harvested; potatoes fair.

MASSACHUSETTS.

Barnstable.—Growing weather; pota-

toes blasting and rusting in places; cranberries an average crop.

Berkshire.—Good crops; much hay injured by rain.

Bristol.—Crops growing fast; too wet in places for potatoes; high wind damaged some grain.

Essex.—Damp weather injured hay but helps crops.

Franklin.—Prospects good; apples dropping, small crop; tobacco good; berries fair.

Hampden.—Potatoes and garden truck good; fall apples plentiful; haying at a standstill.

Hampshire.—Growing weather; corn, potatoes and tobacco good; general rain would be beneficial.

Middlesex.—Crops promising; corn in market; tomatoes ripening; apples fair crop.

Norfolk.—Potatoes and corn backward; prospect good for second hay crop.

Suffolk.—Good weather for all crops; too wet for late haying.

Worcester.—Crops growing fast; some damage by high wind; potatoes in danger from blight.

RHODE ISLAND.

Bristol.—Sweet corn in the market; crops promising.

Newport.—Good growing weather; crops look well.

Providence.—Good weather, except too wet for potatoes, danger of rotting.

Washington.—Too wet for potatoes, probably some damage; other crops look well.

CONNECTICUT.

Fairfield.—Rain too late for many potatoes; corn good; fall fruit promising; oats now harvesting.

Hartford.—Tobacco and corn good; potatoes show injury by blight; haying about completed.

Litchfield.—Berries fair; corn good; mowed lands and pastures improving.

New Haven.—Crops growing fast; corn good; blight threatening potatoes; apples small crop.

New London.—Oats light; corn, potatoes and second crop clover look well.

Tolland.—Blight appearing on potatoes; damp weather damaged hay.

Windham.—Growing weather; sweet corn ripe; fodder corn being cut; early apples in the market.

J. W. SMITH,

Section Director, Boston, Mass.

AGRICULTURAL FAIRS

FOR 1898.

We shall be glad to receive information from secretaries relative to the dates of holding fairs not included in the following list.

MASSACHUSETTS.

Amesbury and Salisbury, Amesbury, Sept. 27, 29.

Brookline, Brookline, Sept. 27, 29.

Barnstable, Barnstable, Aug. 30, Sept. 1.

Berkshire, Pittsfield, Sept. 13, 15.

Blackstone Valley, Uxbridge, Sept. 27, 29.

Bristol, Taunton, Sept. 13, 15.

Deerfield Valley, Charlemont, Sept. 13, 15.

Essex, Peabody, Sept. 20, 22.

Franklin, Greenfield, Sept. 20, 22.

Hampden, East Palmer, Sept. 20, 22.

Hampshire, Amherst, Sept. 15, 16.

Hampshire and Franklin, Northampton, Oct. 5, 6.

Highland, Middlefield, Sept. 7, 8.

Hingham, Hingham, Sept. 27, 29.

Hudson, North Adams, Sept. 13, 15.

Housatonic, Great Barrington, Sept. 28, 30.

Manufacturers' Agricultural, North Attleboro, Aug. 30, Sept. 1.

Marblehead, Marblehead, Sept. 27, 29.

Martha's Vineyard, W. Tisbury, Sept. 20, 21.

Middlesex North, Lowell, Sept. 13, 15.

Middlesex South, Framingham, Sept. 13, 15.

Nantucket, Nantucket, Aug. 31, Sept. 1.

Oxford, Oxford, Sept. 8, 9.

Plymouth, Bridgewater, Sept. 14, 16.

Spermer, Spencer, Sept. 14, 16.

Union, Blandford, Sept. 14, 16.

Weymouth, South Weymouth, Sept. 28, Oct. 1.

Worcester, Worcester, Sept. 6, 8.

Worcester East, Uxbridge, Sept. 6, 8.

Worcester Northwest, Athol, Sept. 14, 15.

Worcester South, Sturbridge, Sept. 15, 16.

Worcester West, Barre, Sept. 29, 30.

Androscoggin, Livermore Falls, Aug. 30, Sept. 1.

Aroostook, Houlton, Sept. 27, 29.

Androscoggin Valley, Canton, Sept. 27, 29.

Bridgton Farmers' Club, Bridgton, Sept. 6, 8.

Buxton and Hollis, Buxton, Sept. 20, 22.

Cumberland, Gorham, Sept. 20, 22.

Cumberland Farmers' Club, W. Cumberland, Sept. 27, 29.

Central Washington, Machias, Sept. 20, 22.

Durham Agricultural, Durham, Sept. 21, 22.

Eastern Maine Fair Association, Bangor, Aug. 29, Sept. 2.

Eden Agricultural, Salisbury Cove, Sept. 21, 22.

East Edgartown Farmers' Club, East Edgartown, Sept. 21, 22.

East Piscataquis, Milo, Sept. 22, 24.

East Somerset, Harland, Sept. 22, 24.

Franklin, Farmington, Sept. 20, 22.

Gray Park Association, Gray, Sept. 20, 22.

Hancock County Agricultural, Hancock, Aug. 30, Sept. 1.

Hancock County Fair Association, Ellsworth, Sept. 20, 22.

Kennebec County, Readfield, Sept. 13, 15.

Lake View Park, East Selma, Sept. 21, 22.

Lincoln County, Damariscotta, Sept. 27, 29.

Lee Union, Lee, Sept. 20, 22.

Maine State Agricultural, Lewiston, Sept. 13, 15.

Maine State Pomological, New Portland, Sept. 13, 15.

New Gloucester and Danville, New Gloucester, Sept. 28, 30.

North Franklin, Phillips, Sept. 13, 15.

Northern Hancock, Amherst, Sept. 20, 22.

North Knox, Union, Sept. 20, 22.

Northern Oxford, Andover, Sept. 20, 22.

North Penobscot, Bangor, Sept. 20, 22.

New Portland Agricultural, N. New Portland, Sept. 21, 22.

North Waldo, Union, Sept. 21, 22.

North Washington, Princeton, Sept. 6, 8.

North Berwick Agricultural, North Berwick, Sept. 20, 22.

Oxford, Norway, Sept. 28, 30.

Orrington Agricultural, Orrington, Sept. 20, 22.

Ossipee Valley Union, Cornish, Aug. 30, Sept. 1.

Pittston Agricultural, Pittston, Sept. 20, 22.

Penobscot, Bangor, Sept. 13, 15.

Riverside Park Assoc., Bethel, Sept. 13, 15.

Richmond Farmers' Club, Richmond, Sept. 27, 29.

Ramsdack Park, W. Newfield, Sept. 27, 29.

Southern Aroostook, Sherman Mills, Oct. 11, 13.

Sagamahog, Topsham, Oct. 11, 13.

Somerset, Madison Bridge, Sept. 6, 8.

Somerset Central, Somerset, Sept. 6, 8.

Springvale A. and M. Association, Springvale, Sept. 20, 22.

Sturbridge and Fair Association, Sturbridge, Sept. 20, 22.

Sutton, Sutton, Sept. 27, 29.

West Penobscot, Baxter, Sept. 27, 29.

West Somerset, West Somerset, Sept. 13, 15.

Waldo County, Waldo, Sept. 13, 15.

Walden and Penobscot, Monroeville, Sept. 13, 15.

Washington County, Pembroke, Sept. 14, 15.

Washington, Cherryfield, Sept. 14, 15.

York County, Saco, Aug. 30, Sept. 2.

NEW HAMPSHIRE.

Bradford and Newbury, Bradford, Sept. 27, 29.

Rochester, Rochester, Sept. 13, 15.

VERMONT.

Champlain Valley, Burlington, Sept. 6, 8.

Rutland, Rutland, Sept. 13, 15.

Rye and Wells, South Rye, Sept. 21, 22.

Springfield, Springfield, Sept. 13, 15.

Valley Fair, Brattleboro, Sept. 28, 30.

Waits River Valley, East Corinth, Sept. 28, 30.

Winooski Valley, Waterbury, Sept. 13, 15.

CONNECTICUT.

Guilford, Guilford, Sept. 28, 30.

New London, Norwich, Sept. 5, 7.

Newtown, Newtown, Sept. 27, 29.

Union, Enfield, Sept. 20, 22.

Union, Huntington, Sept. 21, 22.

Windham, Brooklyn, Sept. 15, 16.

Berlin, Berlin, Sept. 21, 22.

Franklin, Franklin, Sept. 28, 30.

Chester, Chester, Sept. 28, 30.

Danbury, Danbury, Oct. 3, 5.

East Granby, East Granby, Oct. 3, 5.

Farmington Valley, Collinsville, Sept. 7, 8.

Granby, Granby, Sept. 7, 8.

Hartford, Hartford, Oct. 4, 6.

Killingworth, Killingworth, Sept. 6, 8.

New Milford, New Milford, Sept. 6, 8.



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